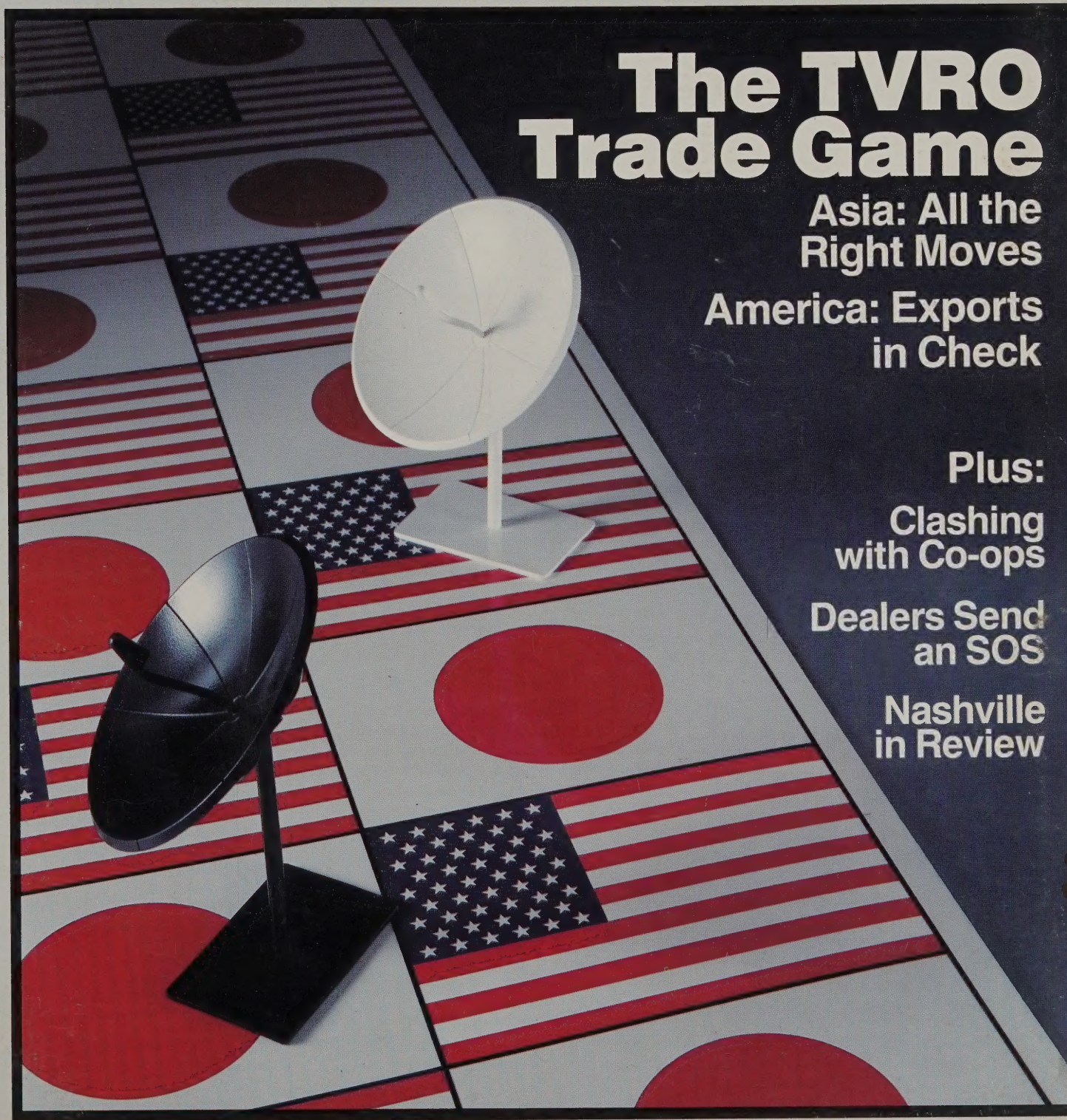
SATELLITE
DEALER

THE MAGAZINE FOR THE HOME SATELLITE SYSTEMS INDUSTRY ☐ US $4.00 ☐ NOVEMBER 1985



The TVRO Trade Game

Asia: All the Right Moves

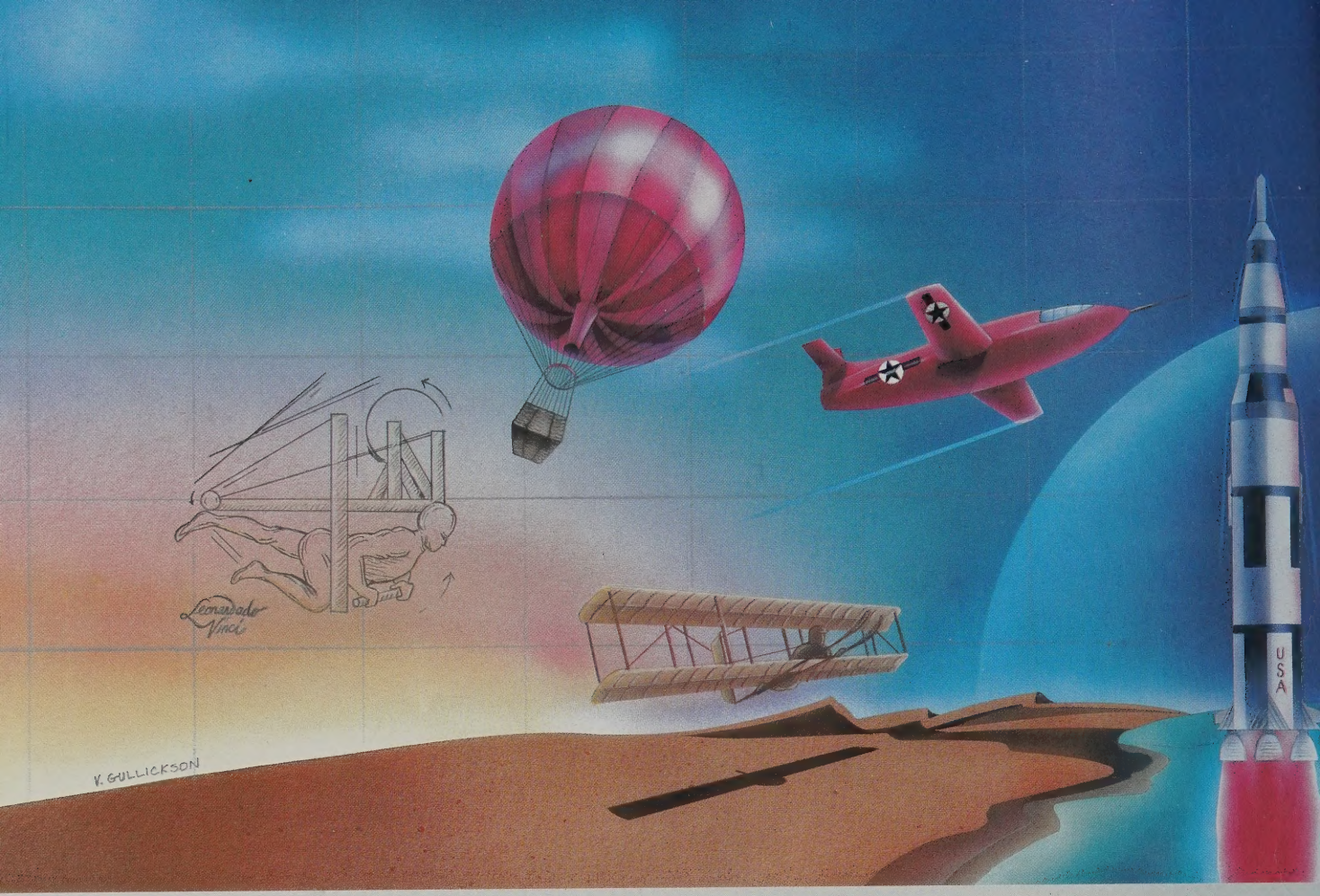
America: Exports in Check

Plus:

Clashing with Co-ops

Dealers Send an SOS

Nashville in Review



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with dealer financing, co-op advertising, technical service and dealer training seminars.

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Uniden receivers have met their match.

For years, no one was quite good enough.

No one satellite dish antenna quite possessed the exceptional standards of performance that Uniden receivers do.

So we had to create one.

Introducing the Uniden UST-110. An incredibly durable, lightweight satellite dish antenna. The perfect match for the Uniden line of receivers and system components.

The UST-110 features an exclusive Uniden all-extruded-aluminum design with expanded mesh panels, a 5-step baked-on painted weather coating, plus an extra-rigid, heat-treated rib design that maintains high parabolic accuracy.

And to aim the UST-110 there's our advanced line of precision antenna positioners.

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It might not be a match made in heaven. But it's close.

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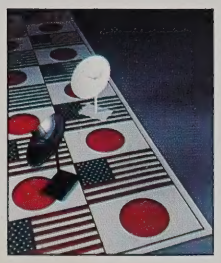

COVER: It's frustrating to lead the world in technological innovation, then lose our markets to foreign competition, but equipment made in Japan, Taiwan, and Korea is now predominate in this homespun American industry. Our coverage this month contrasts the flood of Oriental products pouring into this country against the trickle of "Made in America" goods finding their way into foreign markets. Photo by Robert Dawson.

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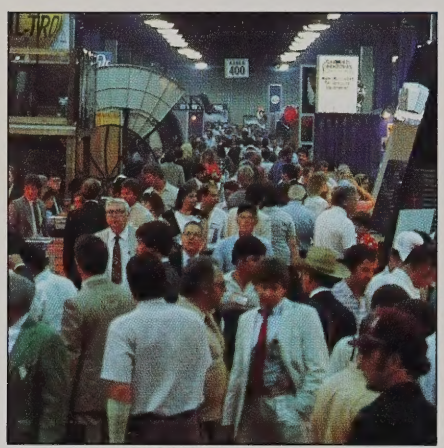

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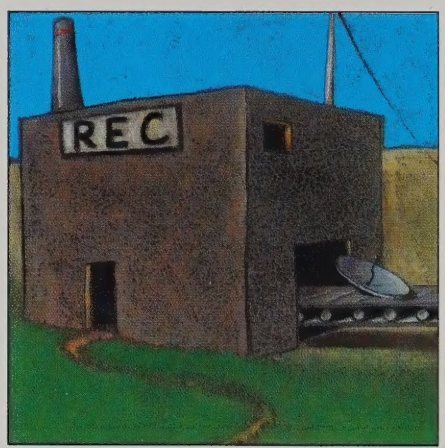

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Foreign markets look ripe for satellite TV, but because of red tape and unfair rules, U.S. companies are missing the boat.

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27 Dealer of the Month
Just 22, Mark Cleveland is proof positive that age need not be a barrier to success.

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A picture is worth a thousand words to us—and $50 to you.

Everything you always wanted to know about Satellite Television, but didn't know who to ask . . .

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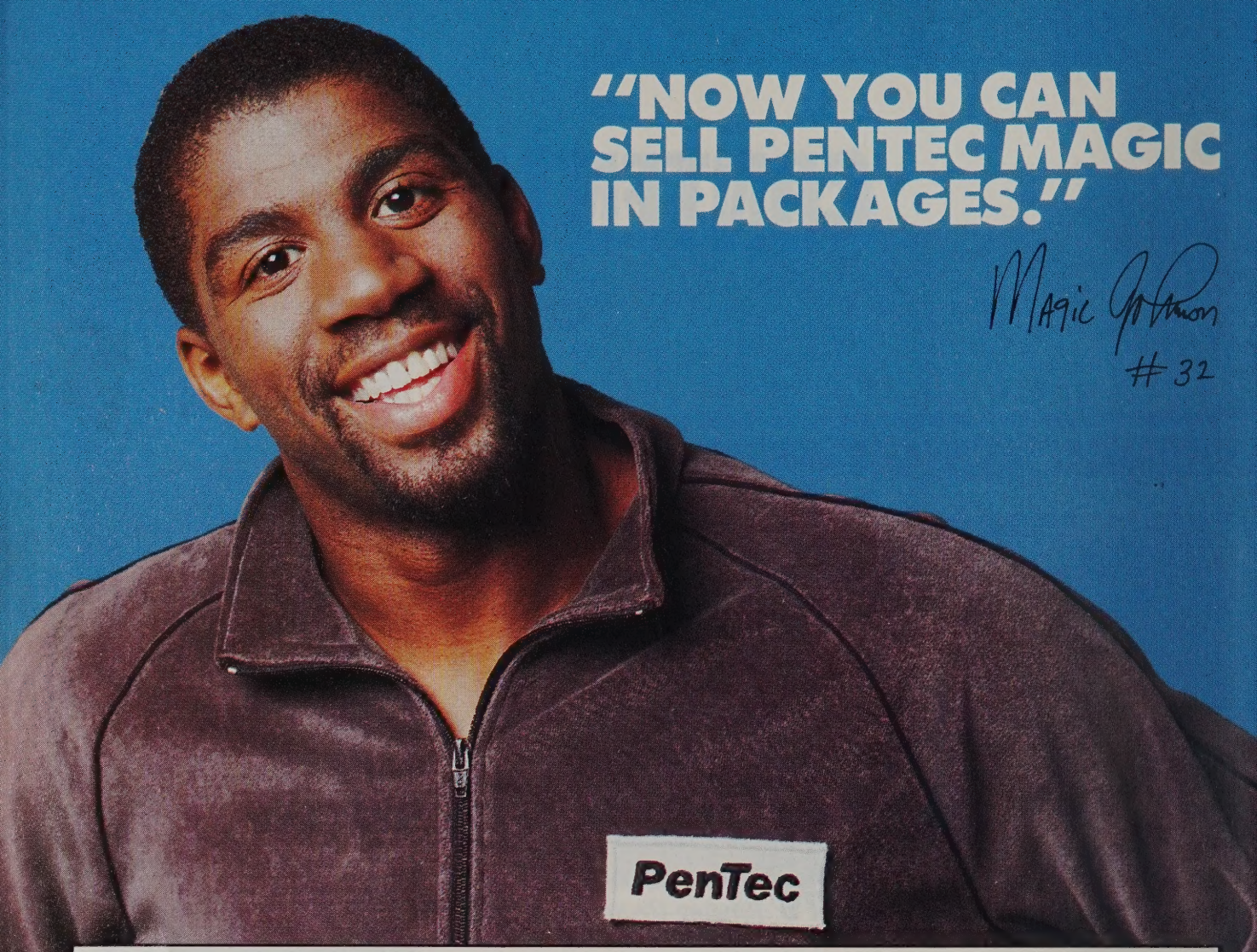


Teamwork is important when it comes to home satellite TV.

That's why PenTec has developed an entire system of electronically-integrated, matched components designed to work together.

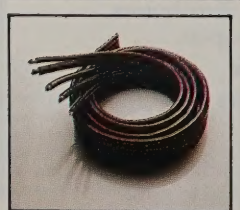
And we back the system with a sales and service support program that'll make PenTec products sell like magic.

From our new Magic-10 dish and LNB, to the Alpha receiver and Omega positioner, it's a complete system—including the only cable that's UL listed for satellite use to tie it all together.

And since it all comes from one source, and that source is PenTec, it's easy to order, and installs in minutes.

The Alpha/Omega system from PenTec. Now the magic of satellite TV comes in packages.

To place an order or get more information, call toll-free 1-800-MAGIC-GO.



Telephone 1-800-MAGIC-GO. From Utah, call 972-4817, extension 401.

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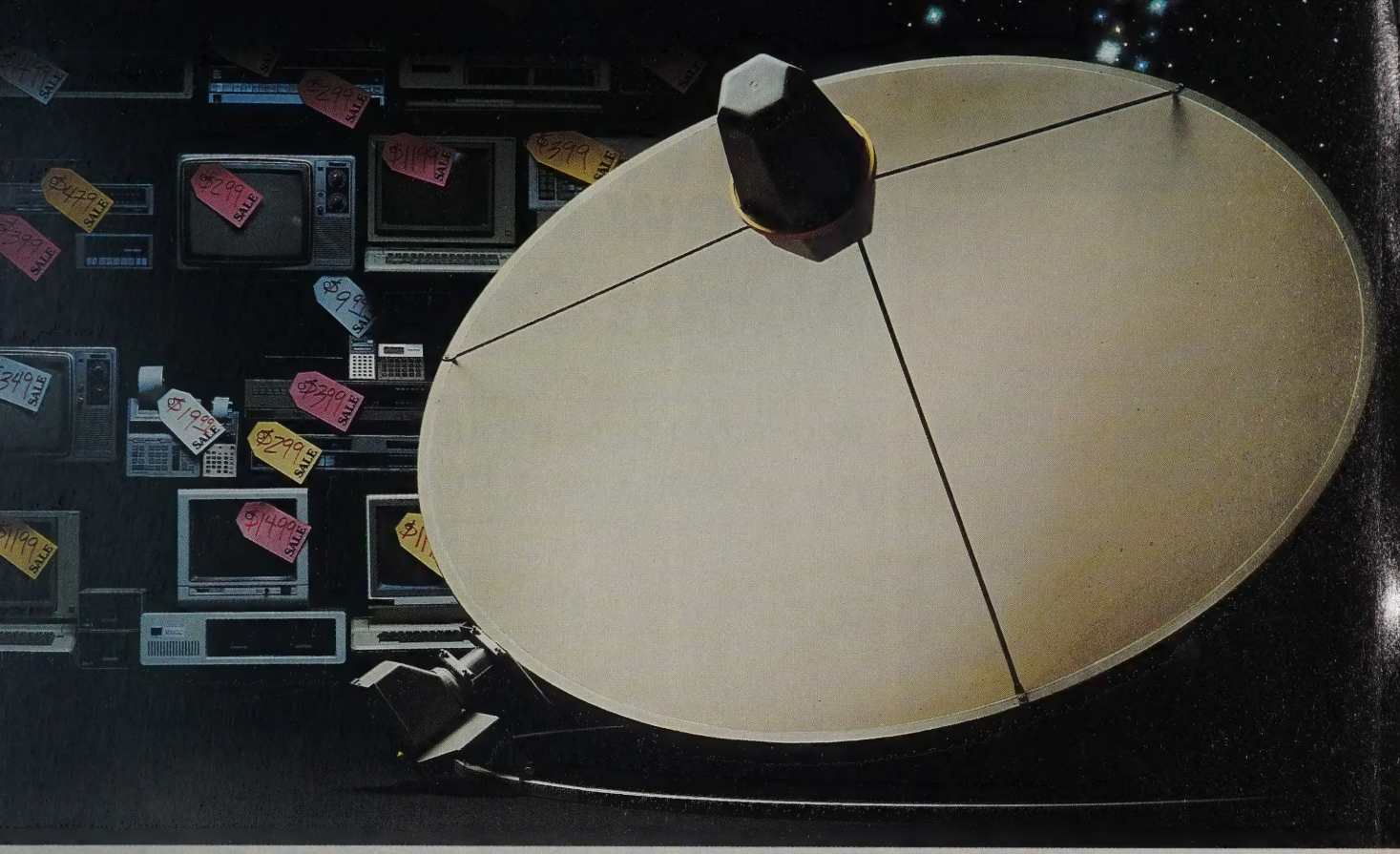


Catch a falling price. EchoStar™: the affordable satellite system.

Remember when micro computers cost mega bucks? When a VCR set you back over a grand? When calculator prices came in three digits? When $3,000 got you a decent home satellite system?

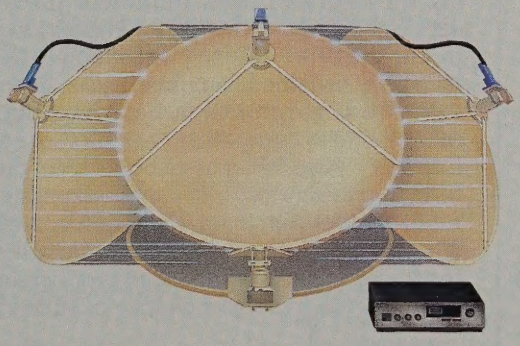
Now EchoStar sends TVRO system prices falling.

The EchoStar system has a suggested retail price of under $1,000. Complete. No other comparable satellite system can make that claim.

And EchoStar's value continues. Built for ease of set-up in limited space, EchoStar requires no permanent installation. EchoStar sets up in minutes and receives satellite signals anywhere, anytime.

Aluminum construction with one-inch square ribbing gives EchoStar's six-foot antenna full-size strength, durability and quality. Its one-inch square tubing prevents warping and all parts are painted with AstroDrive by Jargi, so EchoStar stands tough to the weather.

EchoStar's dish is a nearly perfect parabola, giving it top-rated efficiency. In fact, the six-foot EchoStar compares to most eight-foot dishes in quality. In portability, there's no comparison—the EchoStar system weighs in at only 75 pounds.



The EchoStar system comes complete. It includes the six-foot antenna with a sturdy ring mount and tri-pod feed system, a receiver, a rotor, a 10 foot pigtail and an LNA. A slight additional cost adds the Full Horizon™ motorized mount, making EchoStar the only ring-mount system with a horizon-to-horizon view.

EchoStar's compatibility with other electronics and ease of use send your site survey costs falling too.

Catch EchoStar's falling price now. Or **W A I T** until the rest of the industry catches on.

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Vol. 3 November 1985 No. 3

BPA

A Few Words About Competition

You might hate it, but without it you wouldn't be in this business.

Without free enterprise, there would be no entrepreneurs, and without entrepreneurs, there would be no such thing as home satellite TV. It is curious to note, however, that depending on whether they're just getting into the business or have been in it since the beginning, dealers respectively consider competition either a healthy catalyst or a dirty word.

In Nashville, for example, members of the SPACE dealer board of directors claimed a wave of competition from so-called "fly-by-night" dealers was threatening to put them under. Unless the trade association stepped in to save them, they said, the industry's reputable dealers would face a dubious future. With surprising alacrity, SPACE responded with a proposal to launch a $1 million national advertising program that would encourage consumers to buy from dealer members of SPACE (see "Dealers in Distress?" on page 49).

There's no question there is a certain fly-by-night presence in this industry at all levels: manufacturers and distributors have come and gone with nearly the same frequency as dealers. But who, really, is a fly-by-night dealer? Is it fair or even reasonable to define a fly-by-night as anyone who is new to the TVRO business and lacks a storefront? If that is the case, then most of today's dealers—those on the SPACE dealer board included—were once fly-by-nights themselves.

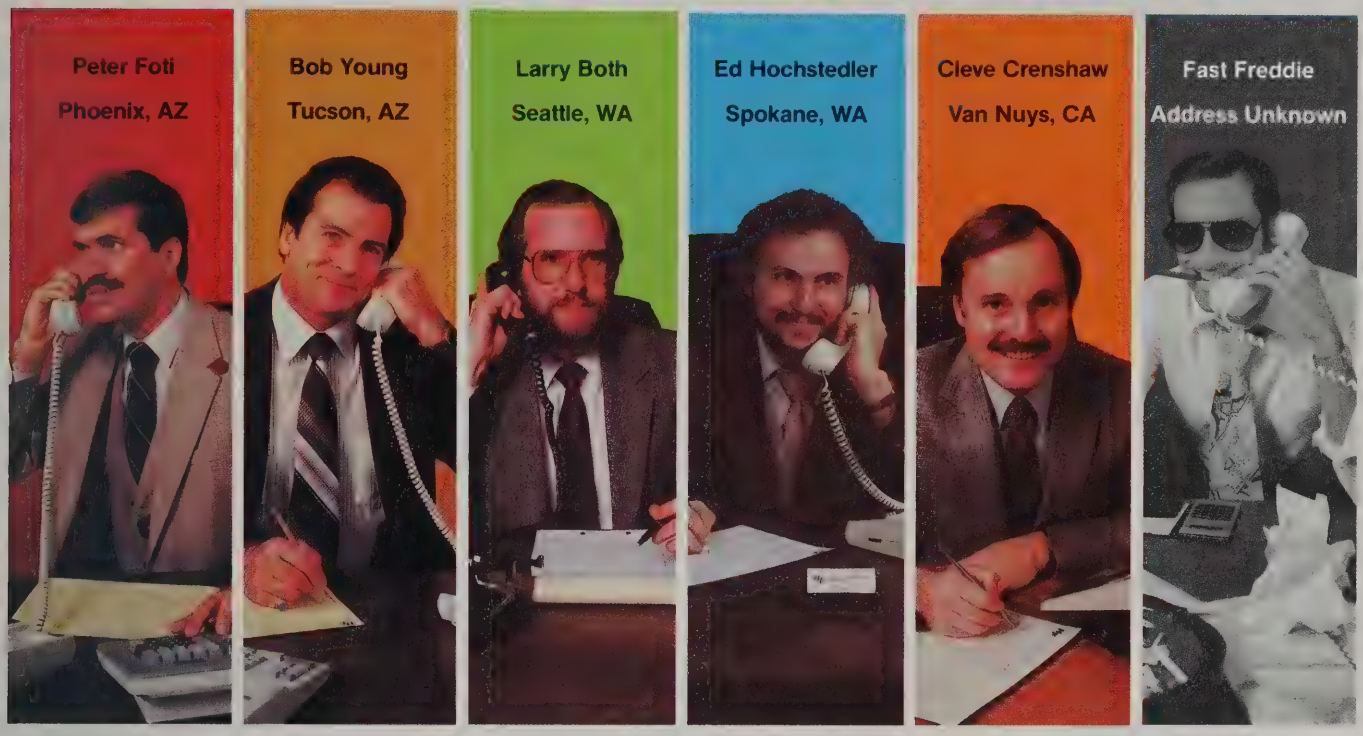
SPACE's million-dollar consumer advertising proposal further suggests that if a dealer is not a member of SPACE, he must be a fly-by-night. This definition fails to recognize that if Jean Laffite swept in off the high seas of history to cash in on home satellite TV, he, too, could become a dealer member of SPACE. Having received $90 in yearly dues—virtually the only prerequisite to membership—SPACE could find itself telling consumers to buy from an unsavory pirate rather than his "fly-by-night" competition.

What will dealers do when retail giants like K-Mart and Sears follow Amway and Radio Shack into the home satellite TV business? If dealers turn to SPACE for help, they'll discover that rural electric co-ops, mass-merchandisers, direct-mail houses, and even cable operators can also be members of SPACE. Assuming they survive such imminent threats, what will dealers do when DBS services begin to offer stiff competition in the next few years? If they plan to mimic the cable industry's reaction to the appearance of C-band dishes within its legally ordained franchise areas, dealers are already on the way out.

We've all got problems, but competition isn't one of them. Whether you're a manufacturer competing with offshore producers (see "All Aboard the Orient Express," page 54), a distributor trying to introduce U.S. goods to competitive foreign markets (see "Trying to Expedite Exports," page 60), or a dealer facing retail competition from many new quarters (see "Clashing with Co-ops," page 38), you must recognize one inescapable fact: what's best for *consumers* is best for the industry, and those players giving consumers the most choice for the least cost have the best chance of surviving. Period. □

Howard Shippey

GUESS WHO'S NOT ON THE HIGH FRONTIER TEAM.



High Frontier has a lot to say about service.

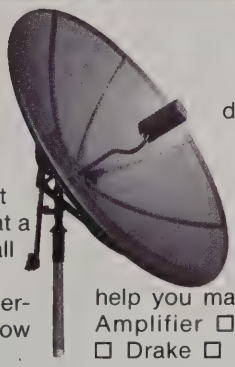
Lately, "independent" TVRO distributors have been coming out of the woodwork. Most of them talk about product and price. But when it comes to service, they're at a loss for words. We're not. Fact is, all of our sales professionals were once dealers themselves. They understand your business. They know how to service that business.

When you rely on High Frontier you can expect genuine support from knowledgeable experts. Factory authorized service, technical assistance and more are only a toll-free call away from any of our five locations.

You can even place your order toll free.

Extensive Inventory, better products, faster turnarounds.

We stock what we distribute. That means we can normally have your order on its way the same day you call. Plus, our vast experience and in-depth knowledge of the satellite TV industry enables us to select the trackers, LNAs, receivers, antennas and other equipment that will help you make the sale. ☐ California Amplifier ☐ Chaparral ☐ Cosmos ☐ Drake ☐ DX ☐ Houston Satellite ☐ Janeil ☐ M/A Com ☐ MSE ☐ MTI ☐ Omni-Spectra ☐ Panasonic ☐ Paraclipse ☐ Prodelin ☐ STS ☐ Uniden ☐ Winegard.



Count on High Frontier because your customers are counting on you.

Let's face it, without the support of a strong, concerned distributor, your customers could be left holding the bag. And you could be held accountable.

That's no way to build a business.

Put your trust in High Frontier. We're one of the West's oldest and largest distributors. We'll back you with "real" service, not "lip service." Plus, when you need us you'll always know where to find us.

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and their affiliates) to commerc
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FAMILY.

private networks and now to the home. The generations of Scientific-Atlanta quality and value come through loud and clear in this latest evolution–a satellite system for the home called HOMESAT.

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The HOMESAT system remains true to its roots with the HOMESAT® 800 block conversion receiver and the HOMESAT® 8000 perforated antenna paired together for unparalleled performance.

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High volume manufacturing experience is a plus with the new HOMESAT systems. Antennas are mass produced using the latest, sophisticated stamping techniques. And system electronics are subjected to the same quality tests and standards used to maintain performance levels in Scientific-Atlanta low cost set-top terminals and U.S. Government and military contract work.

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Our experience is showing.

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Letters to the Editor

Taking Care of HBOnly

After reading in publications everywhere (yours included) that HBO would rather lose 10,000 TVRO customers than a single cable operator, I find that HBO has found a way not only to compete with its cable operators, but also to make significantly higher profits. You see, it doesn't have to buy anything [like cable, headend equipment, poles, service vehicles, set-top converters, etcetera], yet it still charges us the same amount for its programming as a cable company.

According to HBO, $12.95 a month to TVRO subscribers is "fair market value" for its service. Considering HBO's overhead compared to cable operators', I believe HBO is price gouging.

Ron Borta
Alpine Video Electronics
Lake Zurich, Illinois

Puzzled in Portugal

I have a friend in Lisbon, Portugal, who would like to have satellite TV. Would it be possible for him to use an 8-foot mesh dish, an ADL feedhorn, and an 85-degree LNA with the Uniden 1000? Also, could he use a tracker? What would the declination angle be? Where would the satellites be in Portugal? Sorry about my ignorance in these matters, but I would really appreciate an answer to these questions. If you can think of anything else I might need to know, I would appreciate your telling me.

Virgil Williams
Loveland, Colorado

Editor's Note: *We found the answers to Virgil's questions (including some he didn't ask) in the 1985* World Satellite Almanac. *Written and compiled by Mark Long, author of other best-selling books on satellite TV, this 544-page reference book contains a wealth of information on both domestic and international satellite TV. The book can be obtained by sending check or money order for $39.95 to* World Satellite Almanac, *P.O. Box 43, Boise, ID 83707.*

Well, Blow Us All Down

Concerning your October editorial, we dealers have been trying our best to keep abreast of the whole scrambling issue—for our benefit and the benefit of our customers. But each month it gets harder to decide where we stand. We aren't in on the high-level industry, court, and legislative sessions that deal with this matter. We count on you and other industry leaders to eliminate some of the "TI," but it seems you guys are sending out more mixed signals than a gyrating Telstar.

First, the Cable Communications Policy Act of 1984 tells us we're not pirates. Then the programmers insinuate we are pirates again if we don't pay inflated fees. SPACE reminds us we are not pirates, then tells us we should refuse to pay these fees in order to force "good faith marketplace negotiations." Now you, Mr. Shippey, me own trusted leader, tell me I'm a pirate again—blow me down! Trim the sails, me hearties, there be troubled waters ahead . . . where's me eye patch?

Rolf Gerdau
Home TV
Alliance, Nebraska

Editor's Note: *Sad but true, the Cable Act clearly defines a pirate as one who intercepts but does not pay for an unscrambled satellite signal for which payment is required. This is consistent with Webster, whose second definition of*

"Let us give thanks for all the dishes—turkey, sweet potatoes, dressing, satellite . . ."

WHERE THERE'S A Wil THERE'S A WAY.

Powerful Portable Satellite TV.

Now you have a choice of the finest portable satellite systems technology available. The Wilson Little Wil 5 foot system is setting sales records everywhere with thousands sold throughout the U.S. The new 7 foot Big Wil System offers the same versatility as the Little Wil but has performance beyond all expectations.

BUY A SYSTEM, NOT JUST PARTS

When you purchase a Wilson system you are buying the matched components

designed to function as a unit. Your system comes pre-assembled all in one box and utilizing the best equipment in the industry.

SUPERIOR PERFORMANCE

Wilson systems deliver the most outstanding video because our performance specifications are higher than anyone else. We use one piece, aluminum reflectors, precision spun to ensure .010" surface tolerances. We insist on only the highest grade 85° low noise amplifiers to ensure the lowest system noise temperatures.
Wilson satellite receivers come with a high technology Surface Acoustical Wave (S.A.W.) filter and amplifiers to filter unwanted interference from the pure audio and video signals.

TOTAL SIMPLICITY OF OPERATION

Wilson portable systems are the easiest to operate. With complete instructions and our famous "NO TOOLS REQUIRED" assembly, it takes only minutes to be watching your favorite programs from start to finish.

ON THE LITTLE WIL

"After a total elapsed time of just 38 minutes, we were watching satellite tv." "It is as close to a fool-proof system as we have seen." *Satellite Orbit Magazine, June 1985*

"I highly recommend . . ." *Richard Sinervo, Satellite Opportunities Magazine, April 1985*

For more information Call Toll Free
1-800-338-DISH
or (702) 458-0144
One Sunset Way
Henderson, NV 89015

from the leader...
Wilson
Microwave Systems, Inc.

Circle 288 on the Reader Service Card

Call it piracy or petty theft, satellite dishes are stealing
One letter begins:
"It must be wonderful to be an all-knowing newspaper columnist who is wiser than the Congress of the United States of America."
Behind the Mike
Peter Farrell
ogy, the HBO and other pay signals that come to the home scrambled are scrambled by the cable company. The cable company (and those among the dish owners who watch them free) receive the signals unscrambled.
But ignored in all the dish owner-arguments is that many of the programs they are watching are someone

"If we appear *to be pirates, in the eyes of the public we* are *pirates, and headlines will continue to proclaim that fact."*

piracy is "the unauthorized use of another's production, invention, or conception, especially in infringement of a copyright." The NCTA and SPACE and HBO and all the others can argue themselves blue in the face about whether we are pirates or not, but what they think doesn't matter nearly as much as what consumers think. As I wrote in October, "If we appear *to be pirates, in the eyes of the public we* are *pirates, and the headlines of the world's newspapers and magazines will continue to proclaim that fact." This is a serious public relations problem, as it has a direct and negative effect on sales. Not until we begin paying for programming that should be paid for will the mass market cast its doubts aside and embrace home satellite TV as the legitimate consumer electronics product it is.*

Conflict of Interest?

We are dealer members of SPACE and are very disturbed. Our industry organization is doing nothing about the ads which CNN and ESPN have been running throughout the nation. I certainly don't believe an ad placed by SPACE in *Multichannel News* in August can be construed as "launching a counteroffensive," as noted in "Walking the Pay-TV Plank" [September issue, page 24]. Let's face it, how many people watching these ads on CNN and ESPN are reading *Multichannel News*? I certainly am not, and I know of no one who is.

Also in this article, Richard L. Brown of Brown & Finn, legal counsel to SPACE, was quoted as saying the plans of CNN and ESPN could be "ignored" and "have no effect and are unenforceable" by law. If they are unenforceable by law, perhaps they are illegal. If so, why isn't SPACE suing them and being interviewed on *20/20, 60 Minutes,* and the national network news, including CNN? As far as Brown's comment about "no effect," I suggest he visit any satellite dealer in the nation and see the effect firsthand. I will personally make our company-owned store or one of our franchised stores available to him so he can listen to the comments about scrambling made by almost every customer who walks through the door.

I would also like to know why Brown believes CNN and ESPN's plans, which he called "a mockery," will "actually help us very much." Mr. Brown, please explain. The only ones in this industry they could possibly help are firms like Viewers First National (VFN), of which Brown is a principal, along with SPACE President Bud Ross of Birdview, board member Sandy Wirth of Delta Satellite, and pioneer member Jim Rothbarth of STS. This company was set up to market scrambled signals to consumers with earth stations. This, in my opinion, is a serious conflict of interest, especially with Brown, Ross, and Wirth purporting to represent our industry.

I believe SPACE's relationship with Brown & Finn should be terminated immediately, and Ross and Wirth should resign from their positions or be impeached by the board of directors of SPACE. It is apparent that these people are using their positions and our dollars to obtain inside information for personal gain. I am a staunch supporter of the free-enterprise system; however, this is absurd. The Securities and Exchange Commission doesn't put up with such nonsense and prosecutes those [in other fields] who act on "insider information."

SPACE has dropped the ball on scrambling. Let's get some representation with integrity, and let's do it now!

Frank S. Fischer,
HomeVision
Sparks, Nevada

Serving the Blind

You can never imagine how surprised and delighted I was to find my picture featured in the September issue of *Satellite DEALER* magazine ["Let There Be Light," page 42]. How exciting it was to find myself among so many prominent persons in the satellite TV industry.

After your story appeared, I approached Bill Bragg, director of the National Broadcast Museum Superstation, concerning the possibility of having someone read a satellite TV guide for the blind nightly on his channel. He was so excited about the idea, he offered to donate an hour of uplink time and an hour of transponder time. I also contacted an organization in Texas known as Dallas Taping for the Blind, and it is going to do the reading of the guide just as soon as a group of good volunteers can be auditioned and instructed how to go about doing it on the air. The station, by the way, is located on Satcom F-4, transponder 21, subcarrier 6.2 audio. Old-time radio shows and big-band era recordings are featured on this channel 24 hours a day, seven days a week.

Ruth Volrath
Marshall, Missouri

Comments on the editorial content of *Satellite DEALER* magazine should be addressed to: Letters to the Editor, *Satellite DEALER*, Box 29, Boise, Idaho 83707. Unless otherwise stipulated such submission constitutes agreement to publication in this column, with such editing as is deemed necessary by the staff of *Satellite DEALER*. Opinions expressed in these letters are not necessarily those of *Satellite DEALER*.

WHEN YOU'RE A DEALER IN THE WORLD'S MOST ADVANCED INDUSTRY, YOU DESERVE THE WORLD'S MOST ADVANCED DISTRIBUTOR.

Circle 216 on the Reader Service Card

STARPATH SYSTEMS. 8 REASONS WHY WE'RE THE SINGLE SOURCE FOR AMERICA'S LEADING SATELLITE DEALERS.

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Dealers know that the best distributor buying philosophy is not always who sells the **most** but who sells the **best!** A big selection at competitive prices. Starpath distributes quality names like Uniden, Drake, Automation Techniques, Toki, Avantek, Boman, Chaparral, Paraclipse, U.F.I., Laux, Ranger, MTI, Houston Tracker and Pro Sat. Names that are recognized for value.

2. STOCKING MASTER DISTRIBUTOR-INVENTORY IN EXCESS OF $1 MILLION.

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4. AN ONGOING COMMITMENT TO DEALER SUPPORT PROGRAMS.

Seminars and dealer education programs. Prompt technical assistance. Ad art, ready for **you** to use. And, of course, brochures for your customers. Starpath Systems wants to make sure that our **dealer commitment to you** is evident.

5. LOCATED WITHIN 500 MILES OF 50% OF THE NATION'S POPULATION.

Our Lexington, Kentucky location places Starpath on one of the busiest interstates in the country. **We are accessible.** And that means **fast delivery, prompt service.** Geographically, over 50% of the population is right at hand, and so are a **big percentage of dealers.**

6. UNIQUE FIELD SERVICE SUPPORT.

When a dealer calls some distributors for field service support, sometimes they get excuses, or in some cases no response at all. Starpath takes pride in **following up after the sale,** with helpful field service advice. If necessary, we'll send a knowledgeable expert. That's unique.

7. RECOMMENDED BY AMERICA'S TOP MANUFACTURERS.

We take special pride in this distinction. Because for top manufacturers to recommend you, **you have to be doing something right.** Does this make a difference to dealers? We think it **does** to the best dealers.

8. THE ULTIMATE REASON. A SIXTH SENSE.

A feel for our business. Being able to predict trends. Helping dealers succeed. In our industry, the **sixth sense** is almost a **requirement.** Starpath Systems is one of the **fastest growing distributors in the United States.** We think the **sixth sense** is a big reason why.

It all adds up. Make Starpath Systems a part of your dealer growth plans. Give us a call toll-free at **1-800-641-0990** or **1-800-643-9894.** In Kentucky, **1-800-432-0727.** We'll be happy to help you grow every way we can.

WE'RE THE SOURCE.

STARPATH

Quality Satellite Systems

1-800-641-0990 or **1-800-643-9894**

2532 Regency Rd., Lexington, KY 40503 Hwy. 127 So., Box 739, Jamestown, KY 42629

AND NOW, AMERICA'S LEADING SATELLITE DISTRIBUTOR IS GROWING.

STARPATH ANNOUNCES THE OPENING OF TWO NEW OFFICES TO BETTER SERVE DEALERS NATIONWIDE.

Starpath's dealer network continues to aggressively grow, month after month. And our continuing commitment to dealers **everywhere** is more than just a promise. It's a dedicated effort in our quest to provide the absolute best support imaginable. That's why Starpath has just opened new facilities in Birmingham, Alabama and Hillsboro, North Carolina, in addition to our existing Lexington and Jamestown, Kentucky locations.

Full service offices that provide total sales support, field service assistance and a tremendous inventory of complete satellite systems and accessories **at each location.**

The expansion program brings Starpath one step closer to its current dealer network and creates new opportunities for potential dealers.

Starpath is the source, and we continue to be the leader. Call one of our four offices today. We're committed to helping you grow...**wherever** you may be.

WE'RE THE SOURCE.

STARPATH
Quality Satellite Systems

1-800-641-0990
2532 Regency Road
Lexington, KY 40503

1-800-643-9894
Hwy. 127, So., Box 739
Jamestown, KY 42629

1-919-732-9367
23 Daniel Boone Complex
Hillsboro, NC 27278

1-205-655-3235
232 Roebuck Industrial Pkwy.
Birmingham, AL 35235

UNIDEN
MAXIMUM PERFORMANCE CAPABILITY, TECHNOLOGY UNSURPASSED

Starpath Systems offers its dealers the most sophisticated technology in the world with the new line of block down-conversion receivers from Uniden. The new units – the UST 5000 (not pictured), the UST 6000 and the top-of-the-line UST 7000 enable several users, under one roof, to independently access various televison programs from one common antenna.

UST 6000

The 6000 model features Uniden's new high-tech styling, LED channel display, fine tuning skew adjustment and channel up and down controls.

Infra-red handheld remote control allows users to move from one channel to another at the touch of a button. It incorporates polarity and power controls as well. The new UST 6000 receiver is highlighted by expanded audio controls that include stereo (matrix and discrete formats) as well as mono.

UST 7000

The flagship model in Uniden's new line-up is the UST 7000... a handheld infra-red remote unit features built-in programmable antenna control which accommodates up to 81 different satellite positions.

The UST 7000 offers programming controls including pre-programmed polarity. This feature facilitates easy transition from one satellite to another by automatically adjusting to the varying vertical and horizontal polarities of the incoming satellite signal.

The UST 7000 is also equipped with expanded audio capabilities that include both narrow and wide audio formats and Dynamic Noise Reduction (DNR™). Two LED displays provide audio frequency readouts.

This unit also includes a LED satellite position and clock indicator, a LED level indicator which illustrates the strength of the incoming signal and a heavy duty 18'' stroke actuator for antenna positioning.

Starpath and Uniden. Another example of the world's most advanced distributor with the world's most advanced technology.

WE'RE THE SOURCE.

STARPATH
Quality Satellite Systems

1-800-641-0990
2532 Regency Rd.
Lexington, KY 40503

1-800-643-9894
Hwy. 127 So., Box 739
Jamestown KY 42629

Circle 216 on the Reader Service Card

Have You Hugged Your Congressman Today?

Washington needs to hear from every dealer who wants to continue making a profitable living in home satellite TV sales.

THE BATTLE BEING WAGED TO assure the future of the home satellite TV industry has escalated to a new level. Here is a recap of major developments:

Tennessee Senator Albert Gore Jr. introduced S. 1618, the Satellite Television Viewing Rights Act of 1985, in the U.S. Senate on September 10.

The U.S. Justice Department is formally investigating the plans of programmers and cable TV operators to market scrambled satellite signals to home earth station owners.

The CBS television network has scrambled its satellite feeds with VideoCipher I—*not* the consumer-compatible VideoCipher II—technology, effectively shutting out three million U.S. households whose only chance of receiving network programming is with a satellite TV system.

TBS, ESPN, MTV, and Showtime told a closed-door board meeting of the National Cable Television Association (NCTA) that they are forming a "non-exclusive" consortium to offer scrambled programming to the home satellite TV market—through local cable TV companies—beginning next June.

The NCTA plans to go ahead with *its* proposed consortium that, like others, would market scrambled programming to home satellite system owners via cable operators.

HBO intends to be fully scrambled, 24 hours a day, as of January 15, 1986.

The Arts & Entertainment channel, the fifth unscrambled programmer to announce such a plan, now wants $19.95 a year from home earth station owners.

Sponsors of H.R. 1840, the 1985 Satellite Television Viewing Rights Act introduced in the U.S. House of Representatives, report that other congressman have been contacting them for information on the bill. Interest in the bill has been sparked by thousands of letters from satellite dealers and consumers who wrote in response to the "Call to Action" supplement in the September issues of *Satellite ORBIT* and *Satellite DEALER.*

(The text of S. 1618, as well as more complete coverage of the preceding developments, appears in our Signals section beginning on page 116.)

No Marketplace Solution

These latest moves by programmers and their friends in the cable TV industry make it clear that the marketplace is unable to set fair and reasonable prices for access to scrambled satellite TV signals. Rather than enter into negotiations with representatives of home earth station owners, programmers are unilaterally imposing unreasonable prices. For its part, CBS has arbitrarily denied service to an estimated 3 million U.S. households that cannot receive network programming over the air. That hardly seems consistent with its obligation to serve the public under the Federal Communication Commission licenses held by CBS and its affiliates.

In light of these events, it is more important than ever that you ask your congressmen and senators to support the Satellite Television Viewing Rights Act of 1985. If you don't believe that lawmakers on Capitol Hill need to be educated about this issue, consider the experience of Eugene Cervone of Brooklyn, New York. He wrote his congressman, Charles E. Schumer, to express his concern over the programmers' plans to scramble. Congressman Schumer's reply revealed a basic misunderstanding of the situation. The congressman replied, in part:

"I feel obligated to tell you that your unauthorized receiving and decoding of various pay television networks is a violation of the law. Currently, Section 705 of the Secrecy Clause of the Communications Act prohibits unauthorized decoding of encrypted signals. Public Law 98549 provides criminal penalties for the violation of Section 705. I suggest you contact the pay television networks that you are currently decoding so that you may work out a reasonable solution . . ."

Needless to say, Cervone was shocked by Schumer's response. As he said in a return letter to his congressman, "If I'm in violation of Section 705 . . ., then the government had better start building a lot more courtrooms and jails for the approximately 1.3 million satellite dish owners throughout the country."

The lesson here is that many members of Congress could use a quick course on satellite TV, and who better to give it to them than satellite

SATELLITE TV BILL OF RIGHTS

At right is a special "Viewer's Bill of Rights" poster that dramatizes the issues at stake in the battle over scrambling. Use it as a petition to send to your congressmen in Washington. If you agree that these rights need to be protected, fill in your name and address and sign it. Have your customers sign it, too. Then fold the poster along the marks, staple it, and mail it to Washington. For addresses of House members, see the "Call to Action" supplement in the September issue. Senators' addresses are listed on the following pages. To send a copy to each of your congressmen, make copies of your original, or write us for more posters. Send a self-addressed, stamped envelope to Viewers' Bill of Rights, Comm-Tek Publishing, P.O. Box 29, Boise, ID 83707. Do it today!

TELEVISION VIEWERS' BILL OF RIGHTS

We believe that all television viewers, regardless of how they receive television signals, have the following rights:

I. THE RIGHT TO RECEIVE

Every television viewer has the right to receive any signal intended to entertain and inform the public. Any attempt to unreasonably restrict access to such signals is discriminatory and unfair.

II. THE RIGHT TO CHOOSE

Every television viewer has the right to choose the channels he wants to watch. Efforts to restrict choice or force viewers to accept channels they don't want as part of a package violates freedom of choice.

III. THE RIGHT TO A FAIR PRICE

Every television viewer has the right to pay a reasonable price for access to programming compared with what others are paying to receive the same programming. Prices that are set arbitrarily with a predatory intent violate this right.

IV. THE RIGHT TO PROTECTION IN A DISORDERLY MARKET

When the rights of television viewers are threatened in a disorderly market, they have the right to protection until the market shows that it can and will serve all consumers fairly and equitably.

The viewing rights of home satellite system owners are being threatened by the recent actions of satellite television programmers and cable television companies. We call on you to support satellite television viewing rights legislation now before Congress (H.R. 1840 and S. 1618).

Signed,

Signature	Name (please print)	Address

Copyright© 1985 CommTek Company, P.O. Box 29, Boise, ID 83707

FROM: _____

_____

_____

PLACE
STAMP
HERE

TO: _____

_____

_____

WRITE NOW!

The names and office numbers of your senators are listed below by state. You can find each senator's full address by referring to the Senate office building addresses below.

ALABAMA		
Jeremiah Denton	R	516 SHOB
Howell Heflin	D	728 SHOB
ALASKA		
Frank H. Murkowski	R	317 SHOB
Ted Stevens	R	522 SHOB
ARIZONA		
Dennis DeConcini	D	328 SHOB
Barry M. Goldwater	R	363 CHOB
ARKANSAS		
Dale L. Bumpers	D	229 SDOB
David H. Pryor	D	264 SROB
CALIFORNIA		
Alan Cranston	D	112 SHOB
Pete Wilson	R	720 SHOB
COLORADO		
William L. Armstrong	R	528 SHOB
Gary Hart	D	237 SROB
CONNECTICUT		
Christopher J. Dodd	D	324 SHOB
Lowell P. Weicker	R	303 SHOB
DELAWARE		
Joseph R. Biden	D	489 SROB
William V. Roth Jr.	R	104 SHOB
FLORIDA		
Lawton Chiles	D	250 SROB
Paula Hawkins	R	313 SHOB
GEORGIA		
Mack Mattingly	R	320 SHOB
Sam Nunn	D	303 SDOB
HAWAII		
Daniel K. Inouye	D	722 SHOB
Spark M. Matsunaga	D	109 SHOB
IDAHO		
James A. McClure	R	361 SDOB
Steven D. Symms	R	509 SHOB
ILLINOIS		
Alan J. Dixon	D	316 SHOB
Paul Simon	D	462 SDOB
INDIANA		
Richard D. Lugar	R	306 SHOB
Dan Quayle	R	524 SHOB
IOWA		
Charles E. Grassley	R	135 SHOB
Tom Harkin	D	705 SHOB
KANSAS		
Robert J. Dole	R	141 SHOB
Nancy L. Kassebaum	R	302 SHOB
KENTUCKY		
Wendell H. Ford	D	173A SROB
Mitch McConnel	R	120 SROB
LOUISIANA		
J. Bennett Johnston	D	136 SHOB
Russell B. Long	D	225 SROB
MAINE		
William S. Cohen	R	322 SHOB
George J. Mitchell	D	364 SROB
MARYLAND		
Charles McC. Mathias	R	387 SROB
Paul S. Sarbarnes	D	332 SDOB
MASSACHUSETTS		
Edward M. Kennedy	D	113 SROB
John F. Kerry	D	364 SROB
MICHIGAN		
Carl M. Levin	D	459 SROB
Donald W. Riegle	D	105 SDOB
MINNESOTA		
Rudy Boschwitz	IR	506 SHOB
Dave Durenberger	IR	147 SROB
MISSISSIPPI		
Thad Cochran	R	326 SROB
John C. Stennis	D	205 SROB
MISSOURI		
John C. Danforth	R	497 SROB
Thomas F. Eagleton	D	197 SDOB
MONTANA		
Max S. Baucus	D	706 SHOB
John Melcher	D	730 SHOB
NEBRASKA		
J. James Exon	D	330 SHOB
Edward Zorinsky	D	443 SROB
NEVADA		
Chic Hecht	R	302 SHOB
Paul Laxalt	R	323A SROB
NEW HAMPSHIRE		
Gordon J. Humphrey	R	531 SHOB
Warren Rudman	R	530 SHOB
NEW JERSEY		
Bill Bradley	D	731 SHOB
Frank R. Lautenberg	D	717 SHOB
NEW MEXICO		
Jeff Bingaman	D	502 SHOB
Pete V. Domenici	R	434 SDOB
NEW YORK		
Alfonse M. D'Amato	R	520 SHOB
Daniel P. Moynihan	D	464 SROB
NORTH CAROLINA		
John P. East	R	716 SHOB
Jesse A. Helms	R	402 SDOB
NORTH DAKOTA		
Mark Andrews	R	724 SHOB
Quentin N. Burdick	D	511 SHOB
OHIO		
John Glenn	D	503 SHOB
Howard M. Metzenbaum	D	140 SROB
OKLAHOMA		
David L. Boren	D	453 SROB
Don Nickles	R	713 SHOB
OREGON		
Mark O. Hatfield	R	711 SHOB
Bob Packwood	R	259 SROB
PENNSYLVANIA		
John Heinz	R	277 SROB
Arlen Specter	R	331 SHOB
RHODE ISLAND		
John H. Chafee	R	567 SDOB
Claiborne Pell	D	335 SROB
SOUTH CAROLINA		
Ernest F. Hollings	D	125 SROB
Strom Thurmond	R	218 SROB
SOUTH DAKOTA		
James Abdnor	R	309 SROB
Larry Pressler	R	407A SROB
TENNESEE		
Albert Gore Jr.	D	393 SROB
Jim Sasser	D	298 SROB
TEXAS		
Lloyd Bentsen	D	703 SHOB
Phil Gramm	R	370 SROB
UTAH		
Jake Garn	R	505 SDOB
Orrin G. Hatch	R	135 SROB
VERMONT		
Patrick J. Leahy	D	433 SROB
Robert T. Stafford	R	133 SHOB
VIRGINIA		
Paul S. Trible	R	517 SHOB
John W. Warner	R	421 SROB
WASHINGTON		
Daniel J. Evans	R	702 SHOB
Slade Gorton	R	513 SHOB
WEST VIRGINIA		
Robert C. Byrd	D	311 SHOB
Jay Rockefeller	D	241 SDOB
WISCONSIN		
Bob Kasten	R	110 SHOB
William Proxmire	D	530 SDOB
WYOMING		
Alan K. Simpson	R	261 SDOB
Malcolm Wallop	R	206 SROB

SDOB: Senate Dirksen Office Building, Constitution Avenue, Washington, DC 20510.

SHOB: Senate Hart Office Building, Constitution Avenue, Washington, DC 20510.

SROB: Senate Russell Office Building, Constitution Avenue, Washington, DC 20510.

dealers and their customers? As a dealer, you are selling access to as many channels as possible at reasonable rates, so you owe it to yourself to *write today.*

Now that there is a satellite TV viewing rights bill before the Senate, you should write your senators and urge them to support S. 1618. A list of U.S. senators and their addresses appears above. Write to both of your state's senators, explain your situation, and ask them to vote for S. 1618 when it comes to the Senate floor. In your own words, tell why you became a satellite dealer and what you have at stake in this battle.

To become law, S. 1618 must first be approved by the Senate Subcommittee on Communications, which is chaired by Senator Barry Goldwater (R-Arizona). The other members of the subcommittee are: Wendell H. Ford (D-Kentucky); Gore; Slade Gorton (R-Washington); Ernest F. Hollings (D-South Carolina); Daniel K. Inouye (D-Hawaii); Bob Packwood (R-Oregon); Larry Pressler (R-South Dakota); and Ted Stevens (R-Alaska). If one of your state senators is on the subcommittee, make a special point to write to him and urge him to help S. 1618 become law.

Finally, if you haven't written your congressman and urged him to support H.R. 1840, it's not too late. Check your September issue of *Satellite ORBIT* or *Satellite DEALER* for the name and address of your congressman, and for sample letters to help you write your own. If you've misplaced your September issue and would like to receive a copy of the special viewers' rights supplement, just mail a self-addressed, stamped Viewing Rights Supplement, Comm-Tek Publishing, P.O. Box 29, Boise, ID 83707.

The momentum in our drive to protect satellite TV viewing rights is building. Keep the effort in high gear by writing your senators and congressman today. Urge your customers to write, too. □

From Second Fiddle to Center Stage

The industry's female members are 'silent partners' no more, says the president of Women in Satellite Communications.

BY ROBYN NIETERT

FIVE YEARS AGO, ELECTRONICS buffs tinkering in their basements had little idea what they were really creating. Today, about 1.5 million home satellite TV installations later, we are all working in what analysts say is nearly a $2 billion industry. The trade shows, which were first held in cozy Holiday Inns and had all the ambiance and intimacy of neighborhood Tupperware parties, now burst the seams of Nashville's Opryland and the largest hotels on the Las Vegas Strip. The activity in the exhibit halls has grown to rival the madness that takes place on the floor of the New York Stock Exchange two minutes before the closing bell. Confusing? Baffling? Frustrating? "All of the above" is probably the best answer, and that's why Women in Satellite Communications was formed.

For the most part, women were not part of the pioneering manufacturing companies. As women entered the industry in increasing numbers, we were often "silent" administrative partners to male counterparts standing in the forefront. WSC is the brainchild of a number of women in the industry who saw the need for an organization to help guide the industry's growth and shape its future. WSC provides our industry's businesswomen with the opportunity to become involved, contribute our ideas and talents, and make the whole industry a better place for all of us. WSC's immediate goals are to involve our members in:

- industry-related education programs.
- the development of consumer awareness programs.
- the political process affecting the satellite industry.

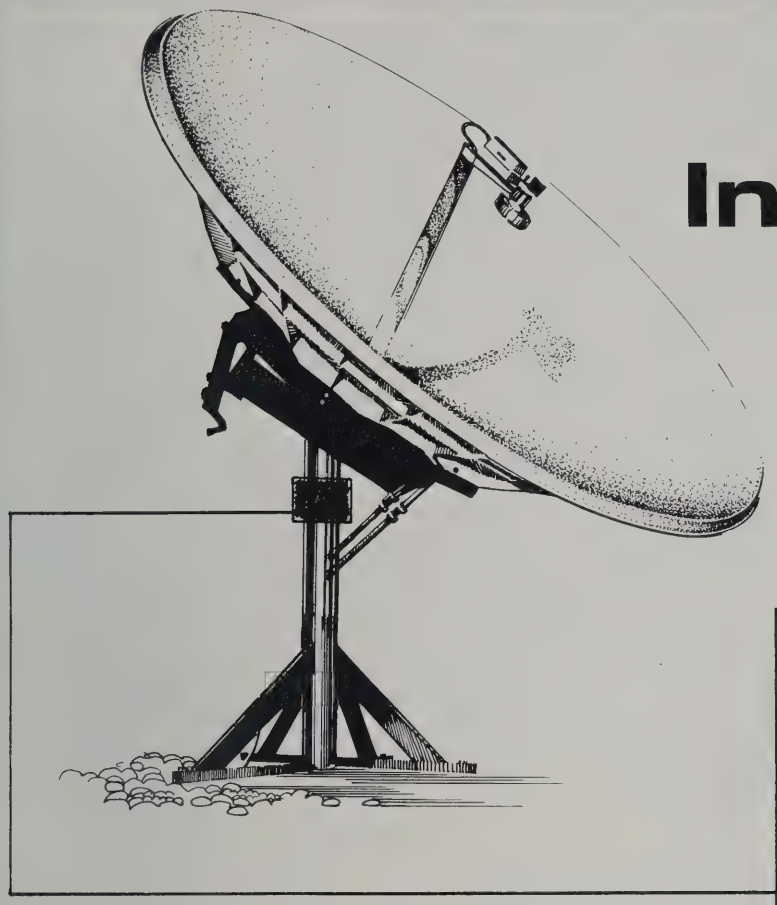
Women have different viewpoints and approaches than men *(vive la difference!)*, and that difference is reflected in WSC's focus. We have spotlighted three main goals in order to give the organization specific direction. Although there are other industry associations (most notably SPACE), WSC has a different attitude and a different philosophy. Although we focus on issues that SPACE also addresses, our structure is more intimate and its approach more direct. This is a result of the association's desire to achieve the specific goals we have identified, rather than to operate as a trade association that must deal with the vast array of problems, needs, and interests of a widely diverse membership.

Richard Basch

WSC's "spotlight" efforts have been successful with consumers, Nietert says.

At the heart of WSC and consistent with our goals are three action committees: education, consumer awareness, and political development. (Additionally, there are two administrative committees overseeing finance/membership/elections and public relations/newsletter/programs.) Although still in its infancy, WSC's political action committee developed the "Spotlight on Oklahoma" campaign that successfully concluded at the end of June. During that month, WSC members called dealers throughout Oklahoma and obtained customer names. We then sent letters to the TVRO owners, explaining the pending earth station legislation on Capitol Hill and encour-

NEW PRODUCTS...



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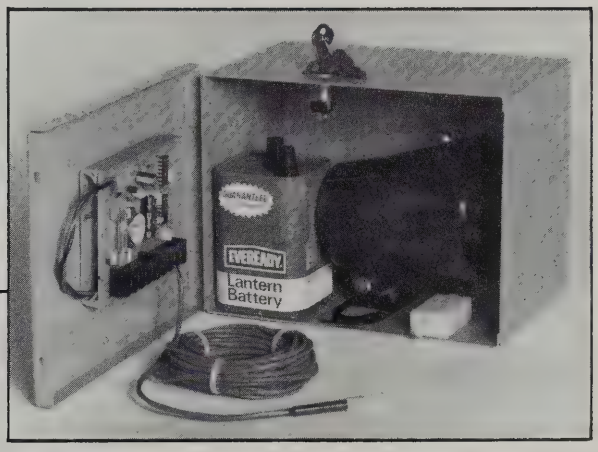

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aging them to write their congressmen. We identified the congressmen and included form letters which the consumers could use. By the end of the month we had contacted several hundred earth station users who we hope made their views on the legislation known to their congressmen.

That campaign was so successful that during the Tulsa show, a dealer from Georgia asked us if we would conduct a similar campaign in his state. Because of the trade show in Nashville, however, and the fact that Senator Albert Gore, a key industry supporter, also hails from the Volunteer State, the WSC political action committee had already decided that its next campaign would spotlight Tennessee. Nevertheless, the committee met and decided that the issue was of such importance to the industry that we undertook campaigns in *both* states during August.

A Tough Job

The education committee has also undertaken a tough job: putting together WSC's educational seminars, which are scheduled for every trade show. Board member Jean Pate was responsible for obtaining WSC's first guest speaker, Chaparral's Mark Sheldon, who gave a terrific talk at the Tulsa show. Education Chairperson Joanne Johnson organized the Nashville seminar, which focused on earth station component basics, and SPACE Chairman Taylor Howard served as moderator to a host of guest panelists. This educational seminar gave those in the industry who work in the administrative end of the business (particularly women), an introduction to the basic operational aspects of satellite earth station components. We were especially proud of this seminar because of the wide range of talent and expertise that had been assembled, and we were delighted by the participants' support of WSC's efforts.

On the consumer awareness front, WSC, in conjunction with SPACE, conducted surveys in Tulsa and Nashville to identify specific consumer problems and help develop responses to them.

In addition to these specific goals of the organization, WSC is working to provide women with access to more information and opportunities in the industry. When fully developed, the WSC network will provide solid support for women participating in the industry. Membership is not restricted to women, however. The support of the industry's men, as well as corporate support, is warmly welcomed.

WSC membership meetings are scheduled to coincide with industry trade shows, which many members attend. These meetings are important because our members are the soul of the organization. We are a very democratic group. We define industry issues that we think need our attention, vote on what to do about them, and then go do it. The members are the key to carrying out WSC's initiatives. As long as our members believe there are things to be done and are willing to devote their time to doing them, there will be a need for WSC. And right now, we have a very long list of projects.

'Walk into a WSC meeting and you will find an electric atmosphere.'

An Open Invitation

Walk into a WSC board meeting and you will find an electric atmosphere where the enthusiasm is infectious. I ought to know. As president of WSC, I am supposed to run the meetings, but as soon as the meeting is called to order, ideas start jumping like fleas from a wet dog; before the secretary can jot down the time and date on the minutes, 10 projects are already on the table for discussion.

The board of directors consists of nine women representing various segments of the industry: two from manufacturing, one from distributing, three from dealerships, one from the press, one from some other industry service, and one at-large member. In addition to myself, they are: Connie Willett-Everett, Satellite Reception Systems, Athens, Ohio, vice president; Kathy Lewis, Horizon Satellite Systems, Claremore, Oklahoma, secretary; Estrella Behar, Hero Communications, Hialeah, Florida, treasurer; Jean Pate, World Entertainment Satellite, Wallisville, Texas; Anna Visalli, Visalli Satellite Systems, Vineland, New Jersey; Judy Frayser, formerly of Automation Techniques, Tulsa, Oklahoma; Ellen Shelburne, Shelburne Films, Reedsville, Ohio; and Anne Roberts, *Satellite TV Opportunities Magazine,* Oxford, Mississippi.

A new organization needs leaders of action and vision, and these women fit that description well. In order to keep all bases covered, we have each taken responsibility for different areas. Lewis keeps track of membership and is chief administrator. Willett-Everett masterminds the newsletter and organizes marketing. Behar keeps us solvent, and Frayser has been our main liaison with exhibitors. Roberts handles the news media, Pate shepherds education, and Visalli brainstorms our political action and dealer programs. Shelburne heads consumer action and contributes to marketing, and as president, I bring individuals together to achieve a cohesive effort.

Communication is the Key

Besides the telephone (which gets lots of use), the key vehicle for WSC members to communicate with each other is the monthly newsletter. It highlights association activities and covers general industry news, as well as information of particular interest to women. It is a quality publication and the association is quite proud of it. WSC also plans to print a membership directory. At $40 a year for individual membership, and $100 a year for association memberships for business sponsors, it's the best bargain in the industry.

With many heralded "fathers" of the home satellite industry receiving recognition, WSC is an opportunity to shine the spotlight on some of the qualified "mothers." WSC strongly believes that women are a vital part of the past and a necessary part of the future of satellite communications. The participation of every woman is encouraged and welcomed. You can contact us by writing to Women in Satellite Communications, c/o Horizon Satellite Systems, 1018 South Lynn Riggs Blvd., Claremore, Oklahoma 74017. If you're in a hurry, call Lewis at (918) 250-8170, or me at (202) 887-0600. □

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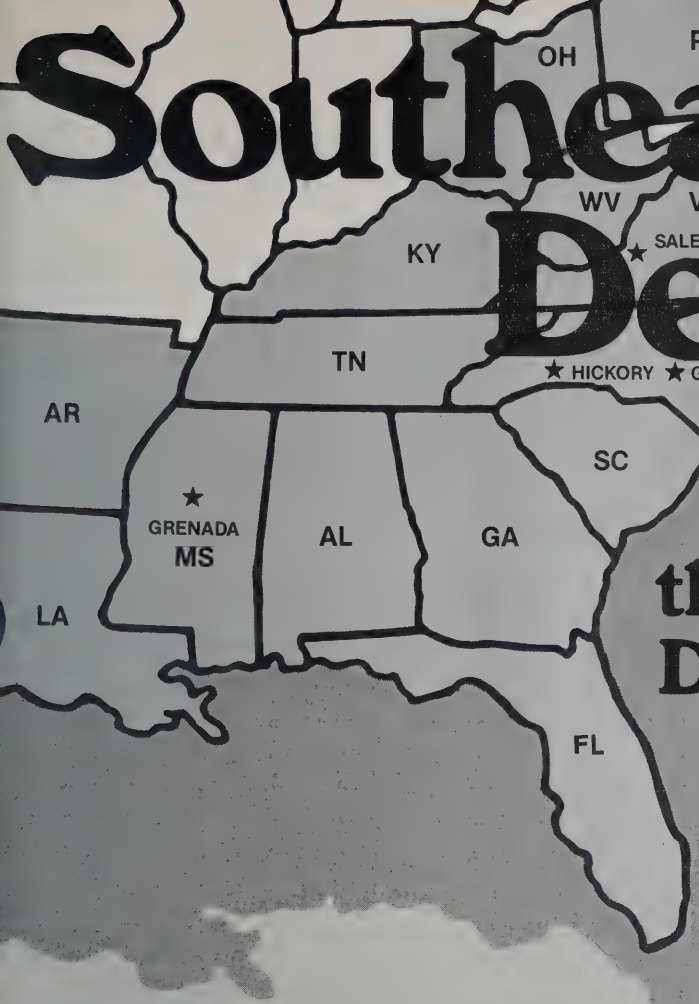

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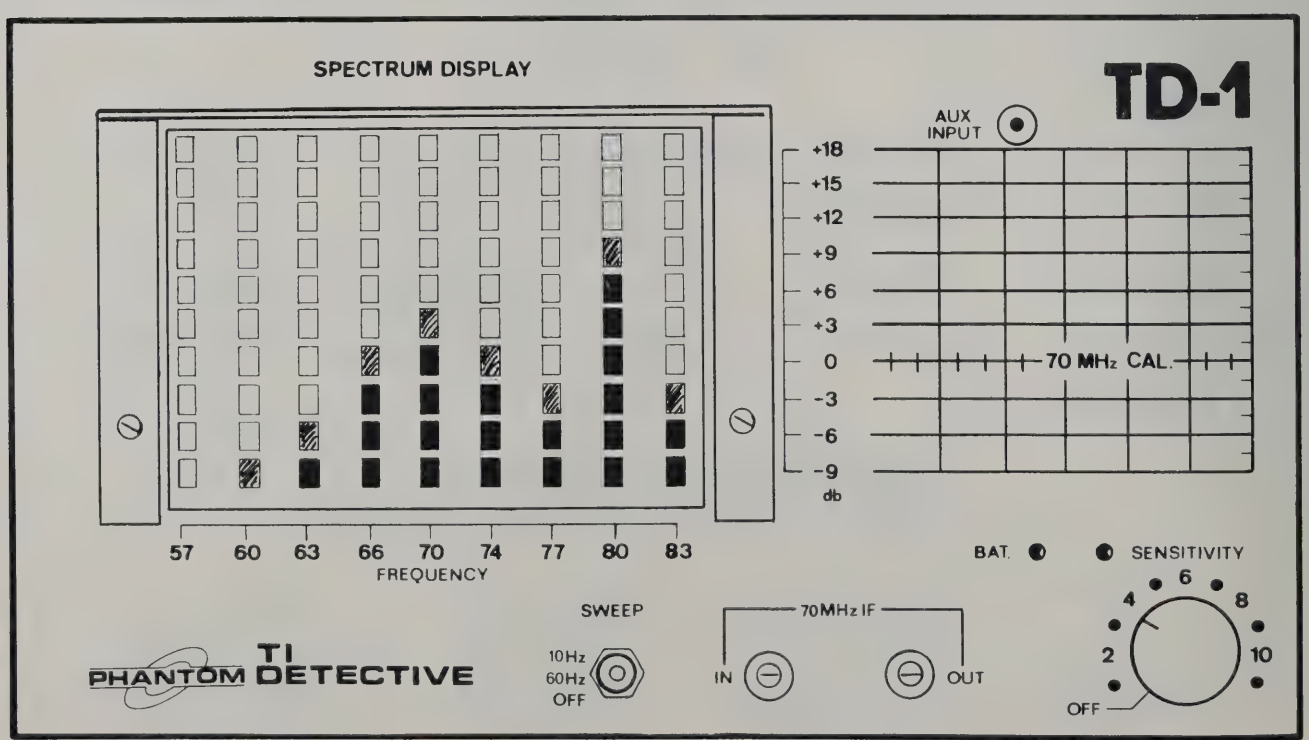

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Eager Dealer in the Beaver State

Savvy beyond his years, 22-year-old Mark Cleveland has parlayed youthful enthusiasm into a thriving business.

BY TED DYER

ALTHOUGH HE IS ONLY 22, MARK Cleveland is years ahead of his competition. Marketing, service, and employee harmony have all played a part in his success story, but sheer entrepreneurial energy is what has pushed Cleveland over the top. As owner of Horizon Satellite Systems in Eugene, Oregon, he has a finger in nearly every possible pie.

Cleveland first encountered satellite TV during his days as a business student at the University of Oregon in Eugene. He worked for three years as a disc jockey and engineer at radio station KUGN to help pay his college tuition; he installed his first satellite dish while working there. Cleveland later worked briefly for a satellite dealer who went bankrupt, but the experience by no means soured him. Armed with an aggressive promotional philosophy gleaned from his radio experience and a $1,500 loan from his girlfriend, Cleveland started his own dealership three years ago. Success was immediate. "I paid her back in two weeks at 18 percent interest," he says. Last year he grossed about $280,000. This year he expects to gross nearly $800,000.

A firm believer in extensive promotion, Cleveland advertises in all media—print, radio, and television. Although the dealership has 13 competitors in the Eugene area, a prospective customer cannot help but know about Horizon Satellite Systems. "We spend between three and four grand a month," he says of his advertising budget. Newspaper ads, he explains, have the most consumer impact, while radio spots provide name familiarity. Television advertising, he says, confers legitimacy and status on his business. "People really take to a well-produced TV ad," says Cleveland. "They think you are really big, even if they don't remember anything in particular about the ad."

Roger Holme

"Even though I'm a couple hundred dollars higher," Cleveland says sales are up.

Cleveland recommends placing television ads during local prime-time sports and news shows, and he always angles for slots preceding top-rated network fare, such as *60 Minutes.* Often, he says, a segment before a popular network show provides prime-time exposure without a prime-time price tag. On radio, Horizon's ads air four times daily on every station in town. Cleveland recommends consulting station rating books, which offer listenership breakdowns for each 30 minutes of programming.

Despite the large amount of publicity, Cleveland doesn't employ an advertising agency, and he insists upon appearing in and producing all his ads. "I think the personal effort is important," he says. "It shows customers that you care."

Advertising is only part of Cleveland's promotional effort. He exhibits his products at all county fairs and home-improvement shows in the area. He has donated a dish to a local high school, and a dish he donated to the University of Oregon's athletic department is visible to all fans who attend home football games. "Thirty-five thousand people saw it last weekend," he says. "They [the athletic department] agreed to announce Horizon's sponsorship at every game." When Cleveland runs out of events, he invents his own. An annual consumer electronics exhibition, now in its third year, got off the ground thanks in part to Cleveland. Another Horizon-sponsored event, an exposition for satellite dealers at a Eugene shopping mall, was such a hit it's now held every six months. →

Cleveland even sees promotional value in his employees' attire. He says company logos for service vehicles and employee uniforms are simple ways to make his company better known. "We're the only satellite company here that wears a uniform," he says. "Everything we do has Horizon written all over it."

Service Outweighs Price

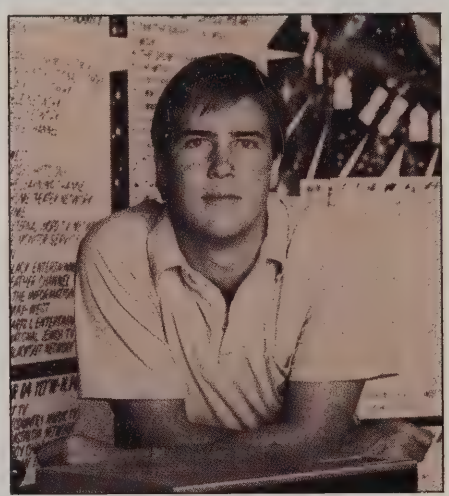
The final dimension of promotion—that is, good word-of-mouth reputation—is something that comes only to dealers who make a strong commitment to service. Not surprisingly, Cleveland's service efforts are equal in scope to his efforts in advertising. "I really don't feel that price is that important," he says. "People buy from me even though I'm a couple hundred dollars higher. Service is the thing."

Horizon also has liberal policies on equipment sales, loans, and upgrading. "If you loan them quality equipment," Cleveland says, "a lot of times they buy it." Customers are allowed 90 days to upgrade a system without incurring additional installation costs, and they are given one week after installation to make the final purchase decision. "We try to take the risk out of satellite TV," he says. "Yes, I've had to pull out some systems, but ultimately it pays off. People know they won't be stuck with something they don't want." He also pays customers $50 for each successful referral they make to his business. "Twenty percent of my business comes from referrals," he says. "The promotional aspect got us into the forefront, but word of mouth is the strongest part, and that comes from service."

Unlike many dealers, Cleveland does not look at service calls as an expense; instead, he sees them as a way to find new sales leads and upgrade old systems. He says he's always happy to make a service call, even if it cuts into his profit margin. He also requires his service staff to be on call on weekends and late at night, and avoids charging for calls whenever possible. "Service creates sales opportunities and goodwill," says Cleveland. "Even if I lose money, time, and gas, that's nothing if I can get a new lead. I've also serviced a lot of customers who are not mine. They've been burned, and they hate the satellite industry. Sometimes I don't charge these people for goodwill reasons, and you should see them light up. They just beam."

Emphasis on Quality

One sure way to keep the customer satisfied, says Cleveland, is to sell him quality equipment, thus reducing service calls and customer discontent. "I sell mostly high-end stuff," says Cleveland. "I send the low-end business to others. I rarely sell a system cheaper than $1,900, and I never sell anything without a motor drive. We sell only the best equipment to customers located far away." Cleveland says his average system price is about $2,700, medium range is $2,400 to $2,800, and high end is $2,900 to $3,500. "The industry should stop shooting for that thousand-dollar system," he says. "We have created the impression in the public's mind that satellite television can be bought for that. In my opinion, the customer who believes that will never be satisfied, because a quality system costs a lot more."



Roger Holme

Cleveland's top priority is service.

Cleveland prefers to sell products made by manufacturers that grant territorial exclusivity, making it difficult for consumers to play one dealer against another, thus enabling the dealers to maintain their prices. Having an exclusive market on particular brands also makes it difficult for other dealers to make retrofit and upgrade sales to his past customers, he says.

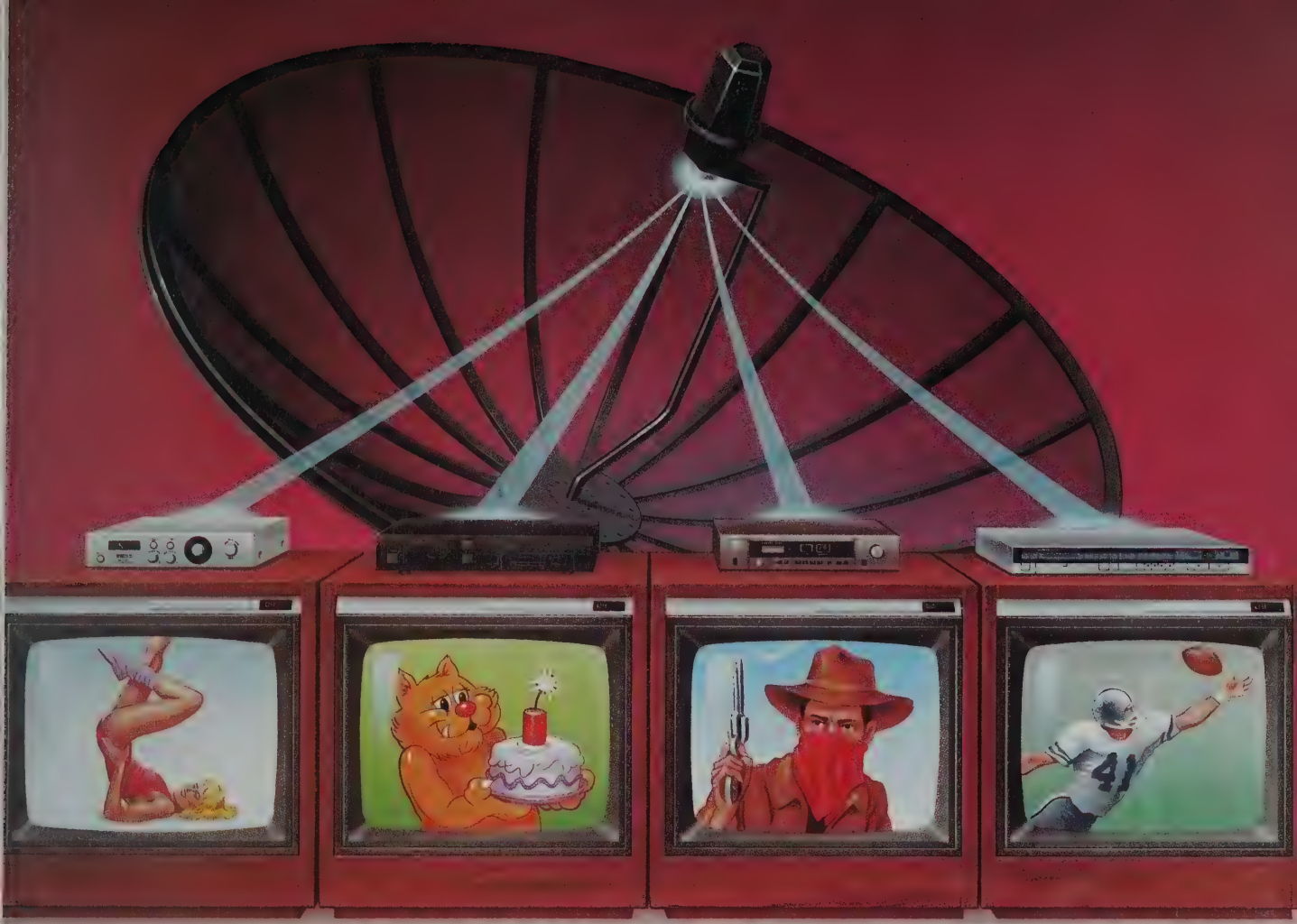
Cleveland has placed a high priority on obtaining a protected market area. "I really believe that if I have a product only I can sell, then I have much more control over my market," says Cleveland, who has such agreements with Kenwood, Birdview, and Scientific-Atlanta. "One of the biggest problems in this industry is that manufacturers are not willing to build a solid dealer base. They spend too much of their time advertising to the public, not to dealers. Dealers are the industry. In order for this not to become a CB-radio type of fad, we need manufacturers that are willing to put money into their dealer networks for things like advertising. Too many manufacturers are interested only in numbers, and they'll sell to anybody."

The Personal Touch

Another important aspect of service, he says, is maintaining a quality staff with low turnover. "Rick Vega is our service technician and our customers have one person they deal with," says Cleveland. "They call Rick and ask for him personally. They're not dealing with a stranger each time we come out, which is what happens when you have high turnover." Cleveland also believes referral business is boosted if the salesman who dealt with the original customer also deals with the person that customer has referred.

The way to establish and keep a good staff, says Cleveland, is to promote a family feeling in the workplace. He has found his best workers to be younger people without family responsibilities. He is also partial to people he has known personally. "I do have some trouble finding qualified technicians," he says. "But so far none of my five cornerstone people has left." Cleveland currently maintains a 10-person crew: three salespeople, an office manager, a systems engineer, a service technician, and four installers.

One aspect of employee relations that is often overlooked, says Cleveland, is the need for "no-compete" contracts. "Otherwise," he says, "you just train your competition." The contract stipulates only that an employee cannot go into business within a specified area for one year after leaving. An employee is paid $200 to sign. Cleveland says the no-compete contract causes no morale problems. "Everybody loves to work here," he claims. "The company is their family and I give them a lot of personal freedom. They know I don't take home more than they do because most of my money goes back into the company. And they all know I work circles around them." □



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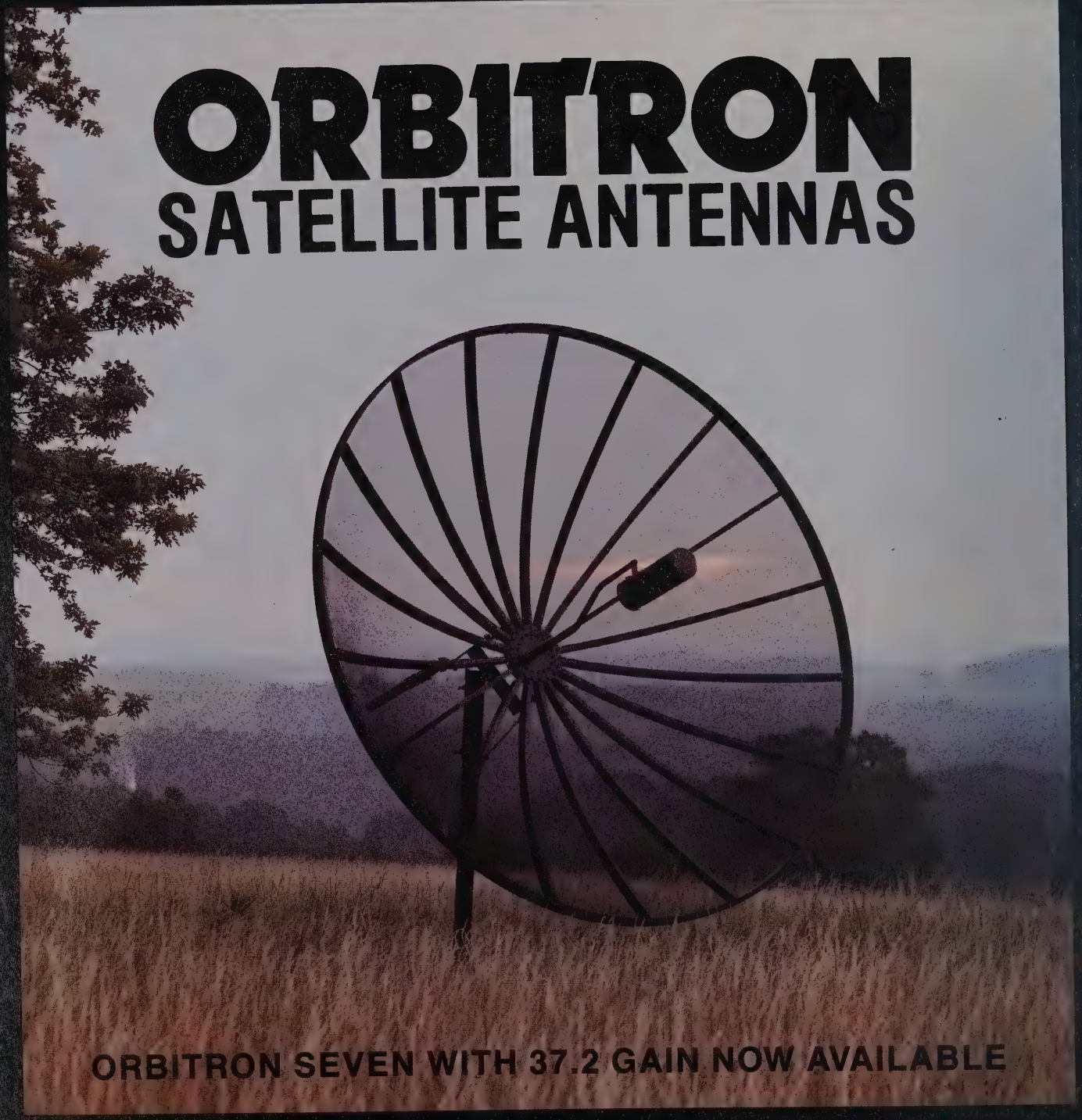

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Alive and Well in Nashville

Despite the fact that fear of scrambling is affecting its health, this industry has a long life ahead of it.

BY HOWARD SHIPPEY & JERRY POYSER

THE STATISTICS WERE IMPRESSIVE: 14,600 people paid to attend, nearly 250 exhibitors in 750 booth spaces stretched the Opryland Hotel to capacity, and some 425 operating dishes sprouted in the antenna farm. Certainly, the SPACE/STTI show held September 2–4 in Nashville, Tennessee, showed the home satellite TV industry to be alive and well. But alive and *how* well was the question. Show attendees were buoyed by good news—such as the announcement that the Justice Department is now actively investigating the activities of monopoly-minded programmers and cable operators—but optimism was clearly tempered by the uncertainty surrounding the issue of scrambling.

Few complained that business was bad, but nearly everyone agreed it was falling well short of the expectations spawned at the year's kick-off show in Las Vegas. Given the disparity between current reality and last spring's sky-is-the-limit projections, a quick head count in Nashville suggested that many exhibitors had to be treading water. The law of supply and demand dictates that when more players compete for fatter slices of a pie that has grown no larger, the ranks of contenders must begin to thin. A number of exhibitors in Nashville were apparently struggling just to retain current market share, hoping to still be in the home satellite TV business when it breaks wide open again. Indeed, just a few weeks after the show came word from Lowrance, a Tulsa-based receiver manufacturer, that it would be leaving the home satellite TV marketplace.

Bob Evancho

If the annual fall show grows any larger, it will burst the Opryland at the seams.

Politics Set the Pace

When things are subdued in other arenas, trust industry politics to set a show's tempo. At a special meeting convened the day before the show, SPACE attempted to clarify its position on a number of issues. Taylor Howard, chairman, and Richard L. "Rick" Brown, legal counsel, teamed up to present a brief history designed to show how quickly the industry has come so far. Brown noted with due pride how SPACE had defeated four separate attempts by cable TV opponents to legislate the home satellite TV industry out of existence. Charles C. "Chuck" Hewitt, SPACE executive vice president, broke down the entire list of satellite programmers, noted their sources of income, and analyzed their need—as opposed to desire—to scramble. After putting all this into perspective, Howard turned to a more sensitive issue—*the* issue, in fact, that had drawn most people to the meeting. Having acknowledged that "this is a wonderful industry for rumors," Howard turned the floor over to Brown to explain his controversial involvement in Viewers First National (VFN).

VFN is a programming service jointly owned by Brown, Charles "Bud" Ross (Birdview), Gus "Sandy" Wirth (Delta Satellite), and Jim Rothbarth (STS). Its 15-year programming contract with SelecTV makes it unique among other proposed "TVRO-friendly" ventures, which to date have coaxed only letters of intent from program suppliers. Virtually no one in the room questioned the potential value of a venture such as VFN to the home satellite TV industry, but

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questions concerning Brown's dual role as both VFN principal *and* legal counsel to SPACE rained so hot and heavy that Brown was afterward heard to say, "Now I know how Geraldine Ferraro must have felt."

Conflict of Interest?

Throughout the intense, sometimes emotional debate, Brown professed to see no potential whatever for a conflict of interest to arise. A major manufacturer and SPACE board member, however, sounded indignant as he voiced his concern that the conflict was obvious and could seriously compromise Brown's effectiveness as SPACE's chief Washington lobbyist. Blair Gilbert, editor and publisher of *TVRO Technology,* stood and demanded satisfactory answers to his questions (it came out later that he had written an editorial for the show issue of his magazine, but on the condition that all would be made clear at this meeting, had yielded to SPACE's request that he not publish it) when Brown's memory appeared to desert him. Among other things, Gilbert wanted to know when VFN was incorporated (December 1984), when the full SPACE board of directors was informed (April 1985), and why, when the announcement was made, Brown was named legal counsel to, not principal of, VFN.

Not everyone was so concerned, however. In very unjournalistic fashion, another member of the industry press stood and delivered a glowing, apparently unsolicited testimonial on Brown's behalf. This impromptu editorial, embarrassing to other journalists striving to maintain at least a semblance of objectivity, meandered as it rambled on, and it was unclear when the speaker finally finished whether he approved or disapproved of Brown's involvement in VFN. Similarly, industry veteran Bob Luly seemed to miss the point when he noted that "we're all in this business to make money" and, indicating Brown, "you don't count my money, I won't count yours." Charlie Brown, chairman of the dealer board of directors, stood and read a prepared statement affirming "at this time" the dealer board's support of the attorney's dual role. (Ironically, a policy statement such as that would theretofore have required the blessing of legal counsel—that is, Rick Brown—prior to release.) The bulk of negative reaction emanated from the manufacturers, distributors, and journalists in the room; on the whole, the dealers in attendance seemed not to know, or care, what the fuss was all about.

Perhaps the most telling clue as to how the issue may be perceived outside the industry came the following day at the Rick Brown vs. Steve Effros debate. Though the two former law partners leveled many jabs at each other, Effros, now legal counsel to the Community Antenna Television Association (CATA), alluded to Brown's involvement in VFN just twice, and then only in passing. Some observers speculated that if a hostile industry makes no more hay of the issue than it did in Nashville, perhaps, as Brown himself contended, it's no issue at all.

'Now I know how Geraldine Ferraro must have felt.'

Congressmen on Parade

Ironically, at a time when his image might be tarnished by outside involvement, events in Nashville served to underscore the importance of Brown's political skill and reputation to the home satellite TV industry. Most notably, the veritable parade of congressmen and their aides marching around the show indicated to every attendee that "Washington knows you are here." While credit must go to SPACE for this achievement, it is doubtful that SPACE alone, sans Brown's political influence, would have been as successful in attracting such visibly impressive congressional support.

Aides representing Congressmen Gene Chappie (R-California), Judd Gregg (R-New Hampshire), and Senator Barry Goldwater (R-Arizona) delivered messages of support from their respective bosses. Congressmen Charlie Rose (D-North Carolina) and Thomas Tauke (R-Iowa) appeared in person, delivered speeches surprisingly pertinent to the industry, and concurred that pending TVRO legislation (H.R. 1769 and 1840) would not "begin going through the legislative process" until 1986. A hurricane prevented Congressman W.J. "Billy" Tauzin (D-Louisiana) from attending, but Senator Albert Gore Jr. (D-Tennessee) was on hand to perk up the crowd with news of his intention to introduce the Satellite Television Viewing Rights Act of 1985 (S. 1618) in the Senate immediately following the show (complete text of the bill appears on page 116). Noting that "the smart money was 10 to one against us" in last year's fight to legalize TVROs, Gore added, "but we won, because in the end if you're right and keep on fighting and don't give up, you're going to win."

But certainly the biggest gun from Washington was Congressman Jim Wright (D-Texas). Currently House Majority Leader, Wright is expected to succeed Speaker of the House Thomas "Tip" O'Neil (D-Massachusetts) when he steps down in December 1986. Wright reportedly has never attended any other communications convention, be it cable or broadcast, and his presence in Nashville was a fine coup for Brown and SPACE. Wright continued the trend of pertinent speeches, a fact that was not lost on those who heard him. "I was surprised at how much he knew," said Howard later. "He obviously didn't hit this cold."

New Products and Trends

Perhaps another indication that this industry has ceased growing, at least temporarily, by the leaps and bounds that marked previous years, was the relative lack of new-product innovation. To be sure, there were new products exhibited in Nashville, but most of the "new" was little more than variation on old themes. Thus, the manufacturers that generated excitement stood out in the crowd—provided one knew where in the crowd to look.

Hughes Communications, attending its first SPACE/STTI show, was like an elephant trying to hide in a corner; that is, the huge corporation was in Nashville to see and be seen. Hughes is scheduled to build and launch a two-bird Ku-band DBS service in 1989, and a 70-cm TVRO system made by Stolle Corporation, a subsidiary of Alcoa and a giant in its own right, was the centerpiece of Hughes' exhibit. A Hughes brochure titled "DBS Impact on Dealers and Manufacturers," explained, "As a

Bob Evancho

Congressman Jim Wright's Nashville appearance was a major coup for SPACE.

dealer, distributor, or manufacturer of home terminal equipment, you are going to be intimately interested in the introduction of Ku-band DBS home satellite distribution. You'll be selling new products in a higher volume to a broader market. This new market, made available by the strong DBS signal, broad channel capacity, and small dishes, will require new marketing and installation techniques as well as customer service. It's not too soon to get ready for the next generation."

Luxor North America unveiled its model 9900 "intelligent" satellite TV system, perhaps the most complete and sophisticated package seen in this industry to date. Included among its features and options are a mesh C-band antenna, 9900 satellite receiver with remote control, matching stereo loudspeakers, infrared remote sensor, 9904 actuator interface, and 9995 slave receiver for multiple receiver installations. The system is "intelligent" because, while the receiver is completely agile in video and audio tuning, it will reset at the touch of a button to the factory preset values. Even the clumsiest of consumers should have no problems operating this system, a fact that was not lost on dealers and distributors.

Perhaps the best-kept secret on the show floor was discovered in Gardiner Communications' small, unpretentious booth. Rumors of very, very small LNAs and block downconverters circulated at the Tulsa show last June, but skeptics had to wait until Nashville to see—and believe. Gardiner has packaged the units so they can be sold separately or combined with feeds to offer 12 or 24 channels to the consumer. An orthomode feed with two LNAs and two block downconverters will occupy about the same space as a Polorotor I and weigh just slightly more. The LNAs will be offered in noise temperatures of 65, 75, and 85 degrees, with (minimum) 50 dB gain. Small size (everything but the WR-299 flange and the N connectors is miniature) and low component count are expected to make these units attractively inexpensive.

Sigma-Vu and Hytek, Too

Sigma-Vu introduced a novel concept in Nashville: *up*conversion. Upconversion was designed for system owners who want block capability without having to scrap their original single-conversion receivers. The upconverter accepts an F input from a block downconverter operating in the frequency range of 400 to 900 MHz, then converts the signal back up to 3.7 to 4.2 GHz, where it can be used by the old single-conversion receiver. Other block-down receivers can be added to the system in front of the single-conversion receiver.

New from Hytek was an automatic, top-of-the-line receiver said to be "artificially intelligent." This receiver is highly complex yet should be easy to install and operate. With an El/Az mount controlled by dual number-crunching microprocessors and some Hytek software, the system virtually eliminates the need for antenna alignment. Pre-programmed with the number of operational satellites and their active transponders, the receiver steers the antenna in a circular, sweeping motion across the arc (just as you would move your hand to clean a chalkboard or wax your car). When the receiver finds a signal, it changes transponders to find the strongest signal, then automatically adjusts azimuth, elevation, and polarity for best picture. Here's where the "artificial intelligence" comes in. The receiver steps through the transponders, remembers which are active and what polarities they are on—and then *decides which satellite it has found.* The receiver is even equipped with diagnostic software that, at the touch of a button, will find its own faults, right down to a bad key on the hand-held remote control.

Inax, a Japanese manufacturer of fiber-reinforced plastics, displayed a new line of solid C- and Ku-band antennas. The Inax line ranges from 2.5- to 4-foot Ku-band antennas, and 5- to 20-foot C-band antennas. The Ku-band antennas are equipped with offset feeds, while their C-band counterparts are equipped with prime focus feeds on tripod-style supports. The antennas will be marketed stateside by Okaya U.S.A.

Multi-sat Communications, a newcomer to the industry, showed a system that will track virtually any satellite. A Nitec robot positioner tracks horizon to horizon with enough accuracy to receive Ku-band signals. The most interesting facet of the system, however, is the feed. Designed by Seavey Engineering, the feed allows the system to receive four senses of polarization (right-hand circular, left-hand circular, horizontal, and vertical) at both C- and Ku-band. Multi-sat was pulling in some good pictures off Intelsat VA F10, transponder 3, which carries RTP channel 7 out of Lima, Peru.

Having made a great old product even better, Paraclipse proudly displayed its new installer-friendly clips and rock-solid mount/drive system. A toothed rubber belt wraps around a D-shaped track and moves the antenna horizon to horizon in much the same way the chain drive actuates the company's world-class 16-footer. The Redding, California, company's products have been the most-copied in the industry, and splash artists should be advised: we saw it first on a Paraclipse. □

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Clashing with Co-ops

Legal battles between dealers and rural electric cooperatives in two Southern states could have a profound impact nationwide.

BY BOB EVANCHO

THE MESSAGE IS CLEAR, THE THREAT is genuine, and Bert Fridlin, executive director of the Satellite TV Dealers Association of Georgia, hopes dealers across the nation heed the warning. "Based on what's going on here," he says, "you'd better

Richard Pagano

Dealers say power co-ops are out of line to sell and lease TVRO equipment.

watch your behinds."

The cause of Fridlin's concern is electric membership corporations (EMCs). His organization and a similar one in neighboring South Carolina have drawn battle lines and are fighting the entry of EMCs into the home satellite TV marketplace. The utilities, which are selling home earth stations for little or no profit, have angered local dealers, who contend that selling satellite TV equipment is not a legal function of EMCs (also known as rural electric cooperatives, or RECs). Although the battles are being waged on separate fronts in their respective states, they share two similarities: both issues are complex, and the outcomes could have a profound impact on dealers across America.

The issue in Georgia and South Carolina is basically this: the dealer groups contend the EMCs have improperly used federal funds to enter the TVRO market, thus creating unfair competition. The co-ops say they are providing a service to their members within the constraints of the law. The dealer groups say the EMCs were established only to furnish electrical energy; the nonprofit EMCs maintain they have the right to offer electrical appliances – including home satellite TV systems – to their customers in the most affordable manner possible.

In South Carolina, Independent Dealers for Free Enterprise (IDFE) was formed to seek legislation that would prevent EMCs from selling TVRO equipment. The Satellite TV Dealers Association of Georgia, also seeking to prohibit co-ops from continuing to sell or lease satellite systems, has filed civil suits against two of the state's 42 EMCs. The Georgia suits were filed in July after legislation prohibiting EMCs from selling satellite systems passed in the Georgia House of Representatives but stalled in committee in the state Senate.

The lawsuits, filed against the Little Ocmulgee EMC in Wheeler County and the Washington EMC in Washington County, seek temporary and permanent injunctions against the co-ops, contending they are operating satellite TV businesses in violation of the state laws that govern EMCs. "We are saying the EMCs are operating in an unauthorized manner called *ultra vires* action," says Fridlin. [Ultra vires means action beyond the scope or in excess of legal power of authority.] "Any member of an EMC may sue the EMC to enjoin it from doing an ultra vires act; that is, any act which is invalid by reason of the fact the EMC is without power or capacity to do such act." In order to fulfill the requirements for filing the suits, two satellite dealers who are members of the Little Ocmulgee EMC and one dealer who has a Washington EMC membership are plaintiffs in the suits along with the Satellite TV Dealers Association of Georgia. "Our main contention is that when you have a quasi-government body that is nonprofit and set up by state law for specific purposes, it's not necessary for them to do anything other than what they were supposed to do," Fridlin says. "In our opinion, the EMCs are committing an ultra vires act."

Not Just A Regional Issue

Although the issue of co-ops infiltrating the TVRO market is a cause célèbre as far as Georgia and South Carolina dealers are concerned, Fridlin stresses that the issue has national, not just regional, implications. Co-ops are reportedly testing the TVRO waters in states including, but not limited to, Virginia, Texas, Illinois, North Carolina, Kentucky, Pennsylvania, New Jersey, Indiana, Minnesota, and Iowa. "Dealers in other states don't think it's going to affect them," says Fridlin. "It may take a while, but it will affect them." Dealers in rural states should take note: as many as 1,050 EMCs in 46 states are serving customers in an area representing 70 percent of the land mass of the United States. And based on the findings of an $80,000 study and four regional meetings attended by about 500 EMCs, the National Rural Utilities Cooperative Telecommunications Corporation (CTC) was created to help EMCs enter the TVRO business nationwide.

Some co-ops, however, have opted *not* to get into satellite TV. Only seven Georgia EMCs originally entered the pilot program, and only Little Ocmulgee and Washington are still selling TVRO equipment. "We had some EMC general managers say they didn't feel they should compete with other small businesses in their area," Fridlin says. "The general managers said they didn't need to get involved in other things." Fridlin says the two EMCs under fire haven't forced any Georgia dealers out of business because those dealers affected were selling other appliances before adding TVRO equipment to their line of wares. "The EMCs have stopped those dealers' satellite TV sales," he says, "but EMCs haven't put them out of business."

In January, a state Senate committee released a report clearing the way for Georgia co-ops to enter the TVRO market. Because state law prohibits EMCs from owning or operating cable TV systems, the EMCs asked the senate to form a committee to determine whether the law might forbid them from selling TVRO systems. Although many dealers claimed the EMCs were overstepping their boundaries, the committee didn't see it that way (see "Georgia on Our Minds," April 1985 issue, page 44). It concluded that satellite TV is not cable TV, and "that low-interest loans are unavailable from the federal government for EMCs to enter into the satellite business, because subsidy financing by the federal government to engage in any business other than the furnishing of electric service would directly conflict with the nonprofit status of the electric membership corporations."

Adding Fuel to the Fire

But Michael J. Bowers, Georgia state attorney general, unofficially ruled in March that the sale of satellite TV systems is not a legal function of EMCs, further fueling the dealers' contention that the co-ops' foray into the TVRO industry is unlawful. Fridlin's group maintains that the EMCs are government subsidized not only through low-interest loans, but also by their nonprofit status. The complaints leveled against the Little Ocmulgee EMC and the Washington EMC contend the co-ops are using federal money to enter the satellite TV business. →

Fridlin maintains that EMCs have misinterpreted the language of the law governing their functions. He says Georgia law defines four purposes for which EMCs can operate: to furnish electrical energy and service, to assist their members in the efficient use of energy, to engage in research to promote and develop energy conservation, and to engage in any legal act necessary to effect the other purposes. "The law says the EMCs have 18 or 20 powers to carry out those purposes," Fridlin says, "and all of those powers have to be in concert with those purposes. The purposes are the key. The language [of the law] is rather broad, and they've broadly construed it so that they can get into the TVRO business, which is contrary to their purposes."

The Little Ocmulgee EMC has established Little Ocmulgee Service Corporation to qualify for financing and to handle its selling and leasing of satellite systems. The Washington EMC sells them directly out of four retail stores it owns. South Carolina's Pee Dee Electric formed a subsidiary called Pee Dee Electricom to sell and lease satellite TV systems. Co-ops are required to create separate, but associated, companies to stay within the boundaries of government regulations concerning the federal funds they receive. Says Fridlin, "There's no way you can compete with nonprofit operations receiving low-interest loans."

Financial Aid

The federal Rural Electrification Administration (REA) was established in 1936 to administer the loan program that enabled the co-ops to provide electrical service in rural areas. In 1969, the National Rural Utilities Cooperative Finance Corporation (CFC) was established to provide private financing for the cooperatives, supplementing the funds available from the REA. "The EMCs are saying they aren't using any [government-loaned] money directly associated with the electric business," Fridlin continues, "but they're still borrowing money and still utilizing their people and equipment to get into the satellite TV business."

'But they're still borrowing money to get into satellite TV.'

Robert S. Moore, general manager of the Washington EMC, says the co-op's entry into the TVRO market is a legitimate business venture that seeks to enhance the lifestyle of its members. "Under the state law governing the purposes of an EMC, we have the right to furnish electrical energy and *service,*" he says. "We are also given the power to assist our members in the efficient and economical use of energy, including, but not limited to, the installation of equipment of any and all kinds. The state law that governs the purposes and powers of the EMCs was revised in 1981, and it was very obvious at the time that EMCs could sell and service

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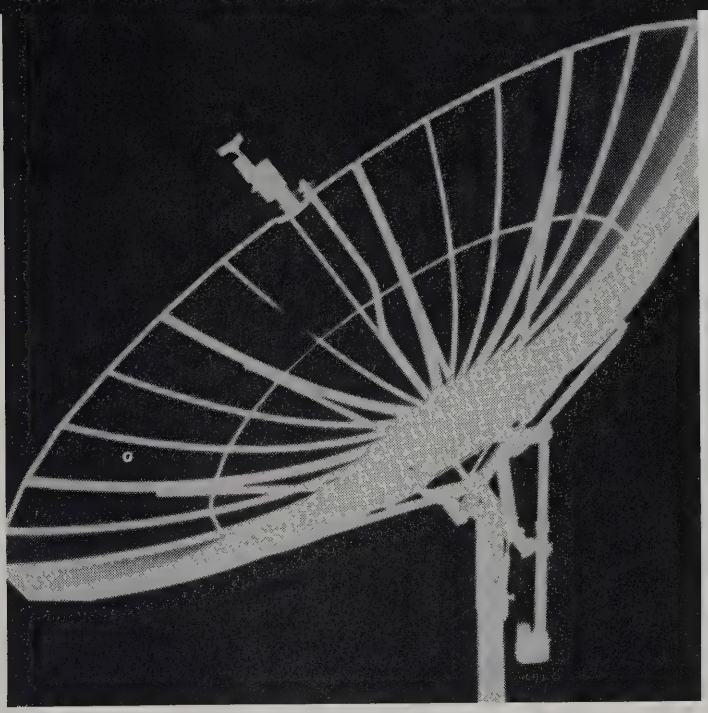

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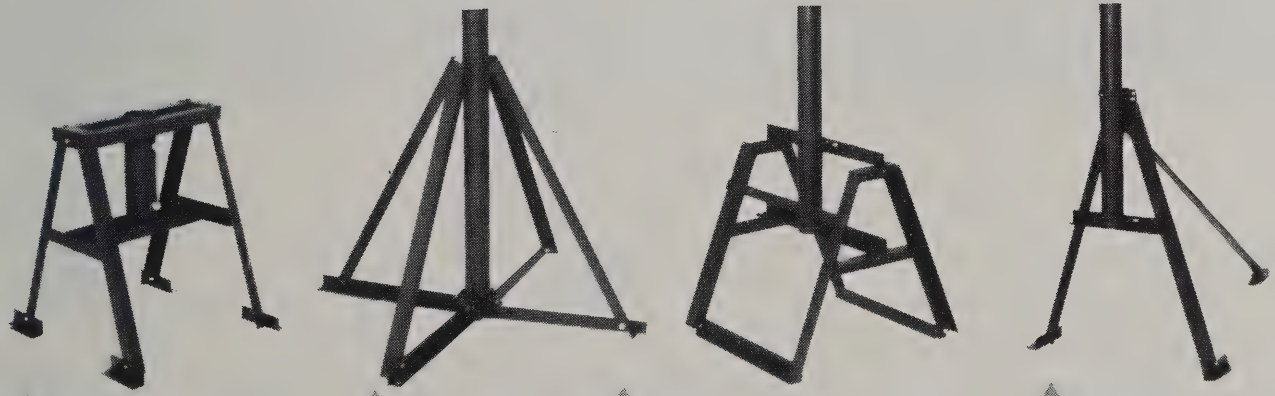

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Separate Sales

Moore also says the dealer association's allegations regarding the use of low-interest loans are without substance. To comply with federal REA regulations, he says, EMCs keep their appliance sales separate from their electrical services. "Loans from the Rural Electrification Administration are based upon a very specific engineering work plan," says Moore. "Loans from REA can only be approved for the construction and/or upgrading of the cooperative's electric distribution facilities. Work included in the work plan must be completed and inspected by an independent consulting engineering firm. Periodically, requisitions are sent to REA for approval of construction that has been completed. Upon approval, REA will reimburse us for the cost of construction with a long-term 35-year loan. It cannot be overemphasized that REA is very strict in auditing loan funds to rural electric cooperatives. Washington EMC's appliance sales and service activities, which include satellite TV systems, are financed through local banks at current rates of interest."

With financing available for up to five years, the Washington EMC is selling Scientific-Atlanta Homesat 9100 systems for approximately $2,000 for a manually actuated dish, and about $2,500 for a motorized system. The Little Ocmulgee EMC offers two systems. The first includes a 9-foot Paraclipse antenna and a Uniden UST-5000 receiver for $27.50 a month and $200 for installation. The second includes a 9-foot Paraclipse dish, a Uniden UST-6000 receiver with remote, and a Uniden UST-730 motor drive for $37.50 a month and $250 for installation.

'We feel there've been violations of the Sherman Antitrust Act.'

Carolina Controversy

Pee Dee Electric, headquartered in Darlington, was accused by satellite dealers of anti-competitive marketing and improper use of government money when it decided to enter the TVRO market last year. But according to *Electric Utility Week,* Travis Medlock, state attorney general, and the REA dismissed the charges. John Gardner, the IDFE's lawyer, says, however, the attorney general's study was not conclusive and that Pee Dee may be in violation of other statutes. Gardner says a bill that would halt co-ops from selling TVRO systems will be considered when the state legislature reconvenes in January. Gardner alsó says lawsuits will be filed regardless of the outcome of the bill. "We plan to file because of damages suffered [by dealers]," he says. "We feel there've been violations of the Sherman Antitrust Act." →

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Henry Lewis, IDFE president and owner of Quality TV in Darlington, says Pee Dee has hurt dealers in the Darlington area, but because of the number of dealers entering and leaving the business, he isn't sure if Pee Dee has directly caused the demise of any.

IDFE was founded when Pee Dee established its subsidiary to sell and lease satellite TV systems. Pee Dee also formed the National Rural Utilities Corporation, reportedly to arrange a $6 million loan at 8.75 percent interest to finance a bulk purchase of 4,000 systems. To have a dish installed and receive service from Pee Dee Electricom, a member pays a returnable fee of $300 and leases the system for approximately $40 per month. The system includes a 12-foot Paraclipse antenna, an Amplica 300 receiver with remote control, and an actuator. After three years, customers can purchase their systems for about $1,200 and maintain the equipment themselves, or they can buy a service contract from Pee Dee for $12 to $15 a month.

According to Moore, the EMCs' plans don't stop at television. "TV sales is just the tip of the iceberg; we don't want our members to be denied the right to have what satellite dishes have to offer," he says. "Our ultimate objective is to use this technology to hold down the cost of electricity. The uses can range from 'load shedding' [shutting down customers' appliances, such as water heaters or air conditioners, during periods of high demand], meter reading, and electronic mail."

No Help From SPACE

According to Bubba Taylor, vice president of the Satellite TV Dealers Association of Georgia, the battle with the co-ops is being fought with no assistance from SPACE, the satellite television industry association. When Robert Williams, executive vice president of Pee Dee, spoke at the SPACE/STTI Las Vegas trade show in March, a rift between SPACE and the Georgia dealers widened. "We got no help from SPACE," Taylor charges. "When Williams came to speak, we went to SPACE and asked, 'Why is he here?' They said as far as they were concerned, Pee Dee is a member of SPACE. We said he is infringing on free enterprise, and from there we had an argument. We never did get SPACE's backing and now he's selling antennas in South Carolina. We've had to use our own resources against the co-ops in our state." Taylor Howard, chairman of SPACE, says the trade association has taken no position on the issue. "As a trade association we can't really take a stance," he says. "If EMCs want to join as members, we accept them. Some dealers are very upset about that. They feel it's unfair competition.

"I think it's important [for SPACE] to talk to the dealers because when the dealers learn more about co-ops, it won't bother them as much," Howard continues. "The dealers need to realize that they're dealing with real businessmen who are motivated the same way they are. The dealers' main problem is not business groups like co-ops. Their problem is people like the guy I heard at the trade show. He said, 'Gee, I was into Herbalife last year and I'm into satellites this year.' Those are the sorts of things dealers need to worry about." □

Consumers Aren't Complaining

Lost in the conflict between satellite dealers and rural electric cooperatives is one faction that can't be ignored: the consumer. While dealers have deplored the co-ops' foray into their market and the EMCs have defended their right to expand into TVRO, the rural consumer residing within the co-ops' boundaries has benefited. At least, that's the indication around Darlington, South Carolina.

Pee Dee Electricom is currently the only EMC subsidiary in the state selling or leasing TVRO equipment. When an article on Pee Dee appeared in the *Darlington News & Press* this summer, a number of readers considered the story slanted against Pee Dee and wrote letters to the editor in its defense. The readers' message was clear: as far as they are concerned, Pee Dee offers far better price and service than the dealers.

"I don't think what they are doing is unfair to anyone," wrote Mr. and Mrs. Donnie J. Crowley of Patrick, South Carolina, in defense of Pee Dee. "We had recently checked on a dish from a dealer and believe me, they wanted a lot more than $300 for a down payment. We just could not afford to purchase one from any of the dealers."

Asked Ned L. Miller of Florence, "If Pee Dee Electricom can offer a better satellite dish package deal, why would a few local dealers have the right to stop them? The maintenance service rendered is one of the best I have ever had. I do not believe any local dealer can offer the same."

Wilbur P. Henley of Darlington wrote, "None are offering anything better than Pee Dee Co-op. The unit they are installing is of high quality and their service is superior."

Della C. Jeffords of Florence was particularly outspoken in her criticism of dealers and praise of Pee Dee. "I can tell you what they [dealers] offered: an inexpensive system at a ridiculous price, an additional hookup fee, no insurance on the system, no guarantees, and no guarantees to be serviced," she wrote. "[Pee Dee] gave me a first-class system and maintenance guaranteed day or night. They gave me a package deal with a written contract, not a long sales pitch and a bunch of bills. Electricom is offering service and honesty, which I'll gladly pay for. Had some of these other businessmen offered me this, I would have had one of their systems."

Wrote Sandra S. Hill of Society Hill, "In my own opinion, I feel that Pee Dee Electric has done an excellent job in offering this service at such reasonable rates. In regard to private dealers, prices are high and financing is not always available."

Agreed T. Church of Florence, "I have been treated fairly in every way by Pee Dee. If it had not been for Pee Dee's offer, my husband and I could not have afforded a dish. I know because we checked around before we purchased. Why don't these people just back off, leave us alone, and let us enjoy our dish without hassle?" □

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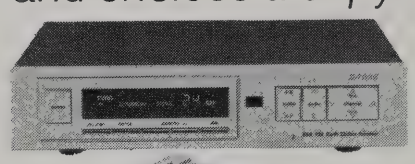

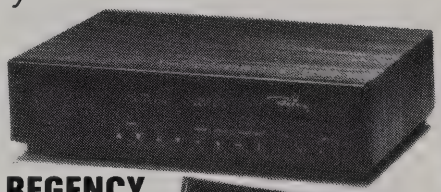

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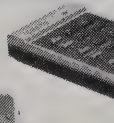

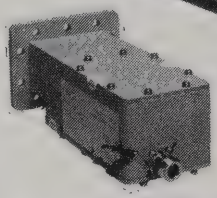

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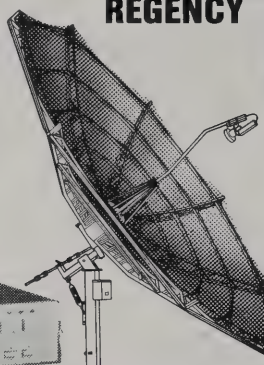

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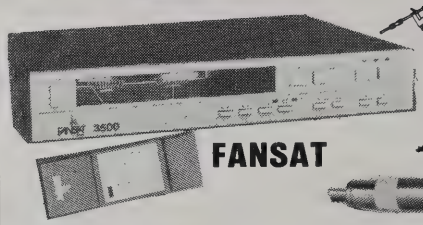

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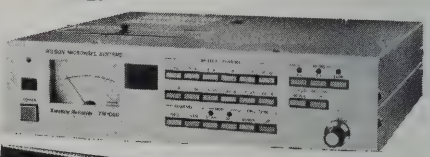

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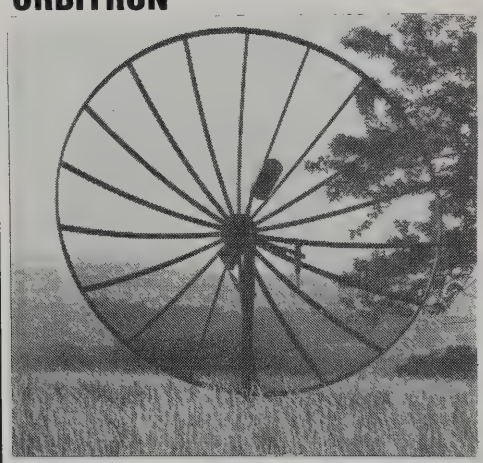

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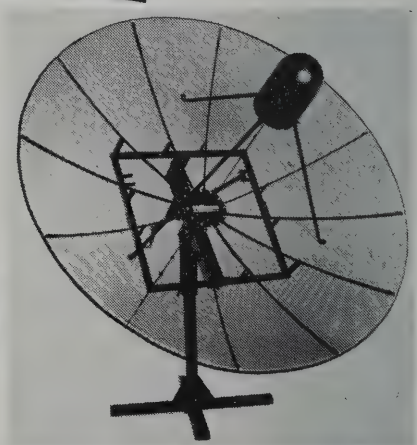

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Dealers in Distress?

Claiming their survival is threatened by 'fly-by-nights,' some dealer board members ask SPACE for help—and get it.

BY KEVIN HACKETT

DESPITE THE LAVISH EXHIBITS, overcrowded aisles, and upbeat political rhetoric at the Nashville show held in the posh Opryland Hotel, the health of the home satellite TV industry was seriously questioned by members of the SPACE dealer board of directors. These dealers, all industry veterans, complained that an enormous proliferation of "fly-by-night" dealers is making it difficult, if not impossible, for them to stay in business.

The SOS burst forth at the close of the meeting of the main board of directors of SPACE. The dealer board members – including Anna Visalli, Charlie Brown, King Oberlin, Wayne Morong, Jerry Fischette, Joe Iozzi, Ed Reynolds, and Frank Abruzzo – took turns emphasizing the severity of their situations. One commented, "There are 17 dealer board members, and we're *all* hurting!" Another affirmed, "We need help, and we need it *now*."

Their wrath centered on new dealers who jump into the business, have no overhead, cut prices to the bone, go out of business six months later, and in the process undermine consumer confidence in all dealers. Without naming names, they also complained that manufacturers and distributors selling to anyone who *says* he's a dealer are at the root of the problem. The solution, they argued, is for manufacturers and distributors to qualify dealers before supplying them with product, and for SPACE to launch a national advertising program designed to encourage consumers to buy only from dealer members of SPACE.

It was clear that the dealers caught the main SPACE board completely off guard, but regrouping quickly, Chairman Taylor Howard agreed that SPACE should take action to support its dealer members. "We were working on a consumer awareness program a little over a year ago," he said. "It's a very expensive program, and at that time the board felt it didn't have the resources to do it. We agreed it is something SPACE should do, and we now feel we're approaching the point where it's even more critical that we do it."

Sally Comport

Sweepstakes gifts will be part of a proposed $1 million advertising campaign.

The unrest displayed at that board meeting was echoed the following day at the standing-room-only SPACE dealer rally. One by one, frustrated dealers grabbed the microphone and aired their gripes: poor product quality, trade advertising featuring retail prices and toll-free phone numbers tempting consumers to buy direct, and lack of nationwide consumer awareness campaigns. The dealers had a lot to get off their chests, and it was obvious that many of them felt they were fighting manufacturers and distributors rather than working with them.

So, are these really dark days for dealers? In retrospect, no such complaints were voiced by the dealer board at the SPACE/STTI show in Tulsa less than three months earlier. Why did these issues take on such critical importance in Nashville? Brown, chairman of the dealer board, indicated that while unrest had been brewing for several months, board members had refrained from making

the matter public. "We had always had these complaints among ourselves," he said, "but the people on the board felt they should publicly maintain a high opinion of the industry. They felt Nashville was the appropriate time to make some negative comments.

"I'm not sure that what was said is totally indicative of the way things are," he added. "It just happens that some of the board members are having problems. It seems times have changed from a year and a half or two years ago."

Are Things That Bad?

Most dealers questioned at random on the show floor said they were satisfied with their businesses. In fact, several dealers who had been in the business four years or longer said they were installing more systems than ever. They did voice one unanimous complaint, however: they said a flood of new, inexperienced dealers has eroded profit margins and pushed established dealers to the brink of disaster.

Abruzzo, who operates Satellite Link in Fort Lauderdale, Florida, said, "There's a lot of price cutting going on. We're still selling a lot of systems, but we're not making any money on them." Iozzi, owner of Sync Satellite Systems in Hancock, New York, complained, "It's the fly-by-nights. They don't take a lot, but if you have 10 or 15 of them in an area and each one of them takes one customer a month, that hurts the full-time storefront dealer who has substantial overhead. That makes his operation marginal."

'If each one takes one customer, that hurts the full-time dealer.'

Who are these fly-by-night dealers? Iozzi offered this profile. "They generally are working somewhere else full time and putting systems in on weekends. They have no overhead. They can cut price."

Morong, owner of Harbor Audio Video in Camden, Maine, argued that if manufacturers and distributors didn't indiscriminately sell their products to anyone calling himself a dealer, the fly-by-night problem would be minimal. "It doesn't seem to matter to the manufacturer who actually sells the product or what happens to it after it gets out there to the consumer," he said. He charged that manufacturers who sell their products to unqualified dealers are hurting both consumers and the satellite industry. "The manufacturers do not care," he said. "They don't care if dealers have a serious retail base out there. There are no reps sent out. They have no way to gauge the strength of the person who's representing their product. It doesn't seem to concern them at all."

Morong said the home satellite TV industry should take a few lessons from the audio industry. He said audio manufacturers investigated his business extensively before allowing him to carry their products. "It was really hard to secure the audio lines we wanted," he said, "but I worked very diligently and managed to secure them. This doesn't happen in satellite TV."

While he had projected a 30-percent increase in his satellite TV sales for 1985, Morong said business has actually declined 10 to 20 percent. "Now, I'm not starving to death," he confessed, "but thank God I've got other things going for me. The part-time dealer is definitely eroding my customer base."

Fixing Others' Mistakes

Larry Nunnery, who has operated a dealership in Colorado Springs, Colorado, for five years, indicated that consumers who do business with fly-by-nights are on their own. "There aren't that many more [fly-by-nights] in my area now than there used to be; they pop in and pop out," he said. "But I won't fix their problems anymore. I warn people when they buy from those guys. I say, 'Sure, you can save yourself a couple hundred bucks, but don't call me when you've got problems.' "

Many dealers have an attitude similar to Nunnery's – if they didn't sell it, they won't fix it. It's a complicated issue, but these dealers may be contributing to their own distress. For example, say an unknowing consumer is burned by a fly-by-night dealer. He's got a dish but no reception; his $1,500 system doesn't work. To his chagrin, he discovers that the dealer who sold him the system has closed shop and departed town. What does this consumer do now? Satellite TV has left a sour taste in his mouth, and when he turns to the supposedly reputable dealer for help, that dealer tells him, "Sorry, pal, you're out of luck." The poor fool's neighbors, friends, and relatives are watching, and since word of mouth is still the best form of advertising at the retail level, what has this so-called reputable dealer just done to his own market? When the Better Business Bureau receives a complaint, the local newspaper prints a nasty letter to the editor, and consumer watchdog agencies begin issuing warnings, his business is likely to suffer further. Thus, when the reputable dealer refuses to be part of the solution, in the consumer's mind he is as much a part of the problem as the fly-by-night dealer he complains so bitterly about.

When reputable dealers won't help, they add to the problem.

Potential Problems

Brown said he isn't opposed to fixing systems installed by other dealers, but he said the practice sometimes creates problems of its own. "The reason isn't necessarily because we don't want to, but we try not to [service systems installed by competitors]," he said. "We did it for a while and found that two bad things can happen. First of all, we might work on a system for two or three hours and still not be able to get it to work. Then the owner blames us, too. The second thing is, I have a real problem telling someone who has been a good customer that I can't come out and fix his problem right away because I'm fixing something for someone who didn't buy from me." →

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Ronnie Mack of Premiere Satellite Systems in Clinton, Louisiana, doesn't refrain from making service calls just because the customer bought his equipment from someone else. "People get into the business thinking there's a lot of fast money in it, big money," he said. "Then they find there is a lot more work to it than they thought, and they can't stay in it. I explain to people what the situation is and what my practices are. If they want to go somewhere else, that's up to them. If I have to work on that system, then they're going to have to pay my going rate. I take care of my own customers first, then I fix someone else's problems."

Who's to Blame?

Mack said the unreasonably low prices set by fly-by-night dealers is his main problem. He said, "In the area we're in, down around Baton Rouge, the competition is really keen. There's a lot of price cutting going on. I try to stick with a 25-percent markup, but I'm competing with people who aren't even making 10 percent. The consumers don't know—they're going where they can get the best price. You can't blame them for that."

There are various estimates on the number of satellite dealers operating in the United States. They range from about 5,000 all the way up to 15,000. With more dealers entering the field each day, it's impossible to tell what the figure might actually be. But certainly the fly-by-night label can't be hung on every newcomer. Carlos Boctor, for example, ran a computer supply store in Walnut Creek, California, for four years and planned to launch a new venture, Satellite TV World, two weeks after the Nashville show. Based on his experience in the computer industry, which he described as "brutal," he said he was entering the TVRO business with both eyes wide open. After hearing the complaints aired at the dealer rally, he predicted satellite dealers are in for a real surprise. Boctor observed, "They were saying, 'Joe Blow down the street is selling things for less. What am I going to do?' Hey, they haven't seen mail-order hit hard yet; they haven't seen Sears and K-Mart get into it. Right now they're crying, but it doesn't compare with what's going to happen. I think dealers will just have to bear down and tighten up a little bit. It's a competitive world out there, but the real wars haven't even begun." □

The Litchfield Group's Remedy

A national consumer sweepstakes will be the centerpiece of a proposed program designed to convince consumers to purchase home satellite systems from dealer members of SPACE.

The proposal is a result of the SPACE dealer board's plea for help in staving off "fly-by-night" dealers. Some of the board members complained that the public relations campaign conducted by The Litchfield Group, SPACE's PR agency, hadn't placed enough emphasis on supporting dealer members of SPACE.

David Venghaus, president of The Litchfield Group, met with the disgruntled dealers the day after the board meeting in Nashville. "They told me they need a program designed to drive potential earth station customers to dealer members of SPACE," he says. "It's very simple; just one objective." Three weeks later a $1 million campaign was proposed that, according to Venghaus, would include the following:

- A national sweepstakes set to run from February 1 through April 30, 1986. Entries will be accepted at participating dealers' stores. There will be a drawing for 10 first prizes of all-expense-paid trips to the Kennedy Space Center to watch a space shuttle launch and visit other Florida attractions. Black-and-white TVs will be awarded to 100 second-prize winners. Miniature satellite dish models with digital clocks will be awarded to 1,000 third-prize winners. If any of the first-prize winners also happens to purchase a TVRO system during the 90-day contest period, he will also be awarded a grand prize of a home entertainment center including a color TV, VCR, and video camera.
- An advertising campaign will be initiated nationwide in January with three primary promotional points: the benefits of buying a home TVRO system from dealer members of SPACE; the benefits of owning a home TVRO system; and the potential benefits of entering the sweepstakes. Full-page, four-color ads will be published in seven to 10 national consumer-oriented publications, Venghaus says. He adds they will also be published in satellite TV program guides. He says the guides are being included in hope that present TVRO owners will encourage acquaintances who have expressed an interest in satellite TV to visit a participating dealership. The ads will also include a regional list of participating dealers.
- Participating dealers will receive a special promotional kit that will include a counter display card and entry box; window posters; direct-mail fliers; handout booklets tentatively titled, "Why Buy From A SPACE Dealer"; ad slicks and press releases dealers can use to promote their businesses through their local media; two taped radio ads; and a videotaped TV ad.
- Dealers will be asked to contribute $300 to receive the promotional kit and have their businesses listed as official sweepstakes entry sites. The TV ad is included for an additional $50.
- Manufacturers will be asked to contribute $30,000 to $40,000. Contributors will have their company logos included in some of the national advertisements.

Venghaus says a press conference will be held in Washington, D.C., in late January to kick off the sweepstakes. It will be uplinked to all participating dealers, who will be encouraged to invite members of the media in their hometowns to attend. The drawings will also be uplinked, allowing participating dealers to invite local contestants to a "sweepstakes party." Venghaus says any first-prize winner present at one of the stores when the drawing is held will also win a 1986 Cadillac.

Venghaus has been devoting the bulk of his time to soliciting funds from dealers and manufacturers. A million dollars is a lot of money, but he doesn't anticipate much difficulty in meeting that goal. "Nearly every dealer I have talked to so far has said, 'That sounds great, sign me up.' We think we'll be successful in raising the money we need," he says.

Venghaus says an $800,000 budget is projected for the national advertising campaign, with an additional $200,000 to $250,000 allocated for dealer materials and prizes. □

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All Aboard the Orient Express

American manufacturers must play hardball to survive an onslaught of Asian competition.

BY TED DYER

AUTOMATE, EMIGRATE, OR EVAPORATE—these are the choices many American manufacturers are facing. For makers of consumer electronics products in general, and satellite TV components in particular, option two is growing increasingly popular. Now that the TVRO industry has risen from humble origins to become a competitive, high-volume enterprise, electronics manufacturers

Robert Dawson

Many players in the U.S. TVRO game have made their move to the Orient.

are moving en masse to the Orient. For dealers, this inexorable shift to the Far East is a mixed blessing.

The reasons for taking production offshore to Japan, Taiwan, Hong Kong, or Korea are simple enough. As the industry grows and demand for product increases, so does competition. Electronics manufacturers are thus faced with the problem of dramatically boosting volume without increasing costs or decreasing quality. Few mass-production facilities exist in this country, and building stateside requires a massive outlay of capital. The solution is to strike an OEM deal with a Far East manufacturer.

The shift overseas by satellite TV equipment manufacturers has been rapid. Industry analysts estimate that at least 50 to 60 percent of all TVRO electronics are now made in the Orient, with that share expected to increase as underfinanced and inefficient U.S. companies perish.

Many American firms have turned to the Far East in an effort to remain competitive. Amplica, for example, has shipped receivers from the Orient for more than two years, and M/A-Com's H-1 and T-1 receivers are made by Hitachi and Toshiba, respectively. Chaparral Communications and Hytek have also inked deals with manufacturers across the Pacific, and by no means does the list stop there.

Kenwood and Panasonic, relative newcomers to the game, have introduced slick new receivers, and ProSat captured the entire industry's attention with a complete system that sells to dealers for only $995. Other major Oriental manufacturers have yet to test the waters, partly because of a too-early commitment to Ku-band DBS technology, and will wait for a strategic moment to enter the C-band market. "Unless they've pioneered the technology, they wait for markets to mature before they jump in," observes Joel Leipzig, president of Hytek. Like many others in the industry, Leipzig believes this assault by offshore manufacturers on the domestic TVRO market means the shakeout of industry pioneers has only just begun. "The ones that will survive," he says, "are the ones that play hardball."

For Leipzig, playing hardball means moving Hytek's production facilities to Taiwan. Staying competitive in receiver manufacturing is, among other things, a matter of cosmetics. "It's impossible to get a receiver made in America that looks and feels like a good receiver," says Leipzig. "A piece of home satellite equipment should look like something you find in a quality stereo store, not like a shoe box with knobs." A streamlined receiver chassis with attractive metallic coloring and state-of-the-art push buttons simply cannot be made in this country, he maintains. But surface appeal is only one benefit of manufacturing in the Far East.

First and foremost, foreign labor is so much cheaper that American firms taking their manufacturing offshore can pay substantial shipping costs and still remain competitive at home. And contrary to chauvinistic opinion, foreign labor is often better. Therefore, American businesses are understandably tantalized by the manufacturing expertise of Far East workers who have the ability to produce complex components under tight quality-control restraints. The loss of American jobs is regrettable, but who can blame U.S. companies for wanting to survive? American TVRO manufacturers have little choice. If they do not move to the Orient, the Orient will simply move here—and clean up. "There is no doubt about it," says Taylor Howard, director of research at Chaparral, "we would lose the market to the Japanese. We try to manufacture as much as we can here, but for us to stay in business, we have to become partners."

Who can blame U.S. companies for wanting to survive?

Let's Talk Trade

Relocating in the Orient may prove even more beneficial if trade tensions worsen between the United States and Far East nations. Korean and Taiwanese forays into such industries as textiles and footwear have significantly undercut U.S. players, and a commanding Japanese presence has become the norm in many American markets. Although several bills restricting imports are fomenting in Congress, President Reagan's commitment to free trade will probably keep them off the books. Nevertheless, a trade war is a possibility. In that case, American TVRO manufacturers with OEM deals in the Orient would likely be sitting pretty – they would have the Far East edge in a market suddenly bereft of Far East competition. Bill Stark, manager of market services at Japanese-owned Uniden Corporation of America, says companies such as his would probably not be affected by restrictions. Noting the popularity of co-op efforts in other industries, such as automobile manufacturing, Stark says, "When you combine American and Japanese cultures into one company like we have, there shouldn't be any problem [with trade restrictions]."

Taking production offshore makes perfect sense for manufacturers, but how will this trend affect satellite dealers? The benefits are obvious. Prices will continue to drop even as the products improve, and dealers are assured stylish components for their showroom displays. Customers are unlikely to balk, since Americans have grown very comfortable with foreign-made electronics. In fact, brand names such as Kenwood and Panasonic can only boost consumer confidence; their presence is a sign that the satellite TV industry is legitimate.

An Ocean Away

But transitional complications are inevitable, especially when a com-

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pany's entire manufacturing base is moved overseas, and a host of long-term problems could conceivably haunt the dealer. Procuring parts, for example, often becomes more difficult when a company moves offshore, and warranty service could become a nightmare if products have to be shipped back overseas. Quality and service are still very much at issue, regardless of an offshore manufacturer's ability.

Not surprisingly, spokesmen for companies that have taken production overseas express nothing but confidence in their quality control procedures. "You 100-percent inspect everything that comes in," says Howard. "You work with the manufacturer until everything comes out perfect, and you run quality control at the manufacturing end and here." Stark speaks of similar precautions but believes his company has a special advantage. "We have Uniden personnel [at the Taiwan factory]," he says. "We know them by name and we know what they do. If we were a subcontractor, our relationship would be very different." Leipzig, however, says this claim is "outrageous." "You don't have to be vertically integrated to achieve quality control," he says. "You just write acceptable quality levels into the contract."

'This aura of Far East excellence is way overplayed.'

Despite such assurances, horror stories abound of offshore mix-ups and outright rip-offs. A fundamental problem, for example, is that few offshore manufacturers have C-band satellites with which to test their products. This has in some cases resulted in entire shipments of worthless receivers. "I think this aura of excellence in the Far East is way overplayed," says Ron Wysong, president of R.L. Drake, one of the few receiver manufacturers willing to build automated plants in the United States. "I don't care what kind of contract you have, it just isn't the same when you go over there. You don't have the same degree of control."

Parts is Parts—Right?

Spare parts and warranty repair are also concerns. While many manufacturers say the solution is simple—just stock adequate supplies stateside—not everyone agrees. "Getting parts is tricky," says one manufacturer who requested anonymity. Repair could also pose problems, not only because inventories may be lacking certain parts, but also because receivers boast increasingly complex functions. When those who build the equipment are separated by an ocean from those who must service it, unfortunate complications often result. "You have to repair it here," says Howard. "If it goes overseas, you'd never see it again."

The message to dealers, in short, is this: an evaluation of offshore manufacturing *must* be factored into product decisions. Do not spare the phone bill. Talk with peers, scrutinize the industry press, and most important, grill distributors.

According to Howard, dealers should rate offshore manufacturers according to how much of their operation remains stateside. If a token sales force is all that remains, it might be wise to look elsewhere. Buy only from companies with substantial repair facilities in the United States, he adds, and make sure service policies are stated in writing. "When you buy equipment made offshore, it should be backed by an American manufacturer for service so that if you get in trouble, you will have a short chain to pull, not one that extends overseas," says Howard.

Steve Lafayette, assistant manager at New Quad Systems in Portland, Oregon, suggests that dealers secure special warranty and repair agreements with distributors when purchasing from offshore manufacturers lacking a substantial track record. Lafayette is one who believes dealer concerns over warranty and repair are well founded; he advises dealers to do their homework when evaluating product from new overseas manufacturers. "You have to spend some time checking things out," he says, "if you don't want to end up losing money." □

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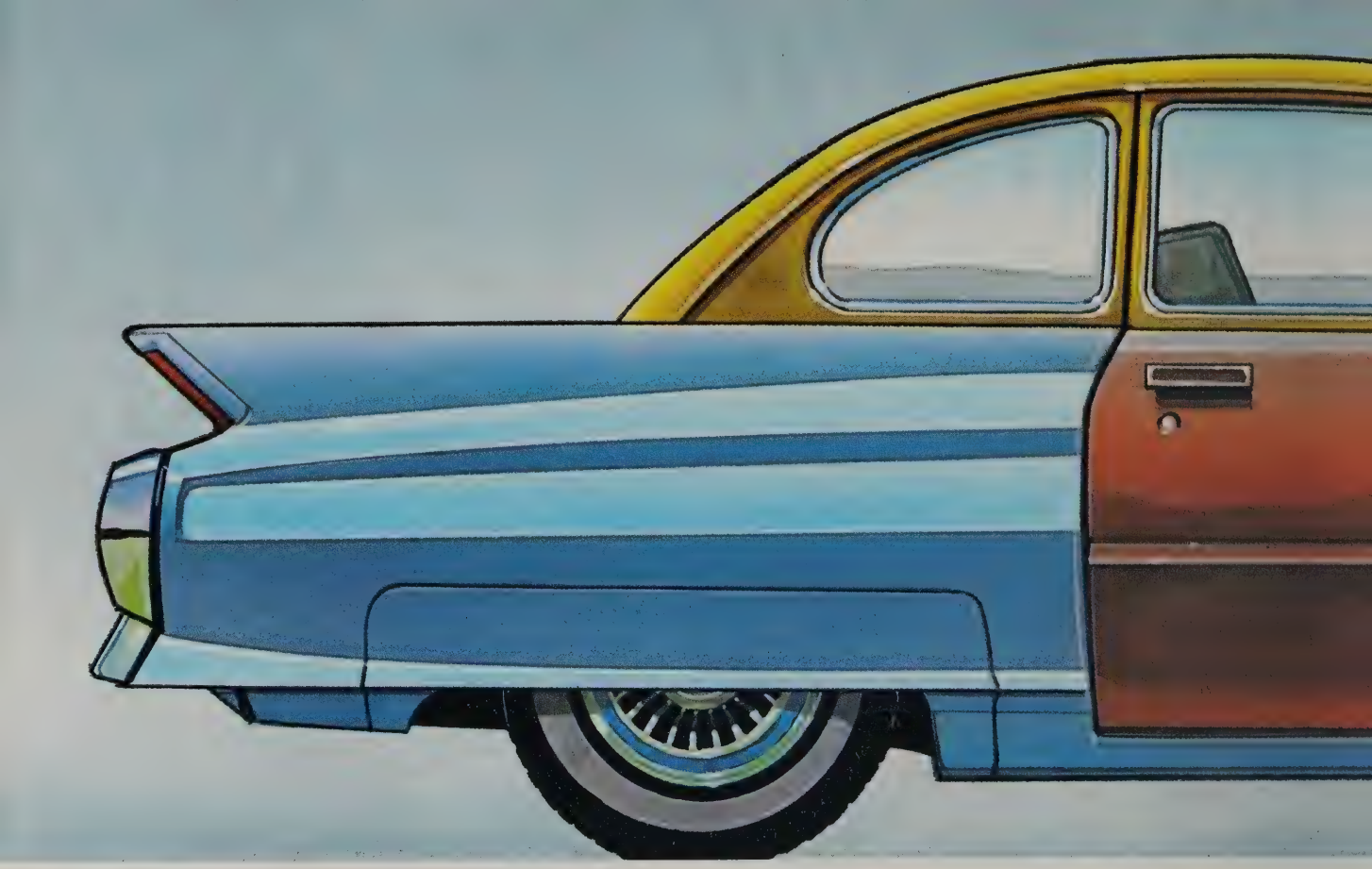

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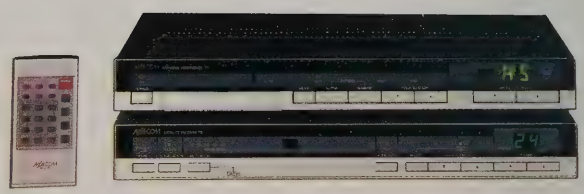

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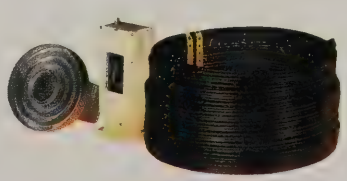

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Trying to Expedite Exports

While foreign-made goods flow freely into America, governmental red tape holds U.S. products at the dock.

Jill Walsh

Some exporters say the government has missed the boat on TVRO restrictions.

BY BILL SULLIVAN

FANS OF THE AWARD-WINNING TELEvision show *M*A*S*H* know that the series constantly poked fun at the military, and sometimes at the entire U.S. government. Among the many situations built around governmental bureaucracy, there is a classic scene where the doctors try to procure an incubator that will help them diagnose illnesses more easily. A supply officer visits the camp, and while he agrees it makes sense for them to have an incubator, he discovers there is no provision on their B.E.L., or basic equipment list, for ordering such a thing. The doctors are distraught but the supply officer, who knows well that what one wants, needs, and gets in the Army are generally three different things, sees no reason to be upset. By simply writing over "machine gun" on their requisition form, he cheerfully explains, the hospital can receive a "pizza oven" instead.

While *M*A*S*H* hits the mark with humor, those who would export TVRO equipment find little to laugh about when talk turns to governmental red tape. One frustrated exporter, in fact, minces no words. He says government restrictions on TVRO exports are "a pain in the ass."

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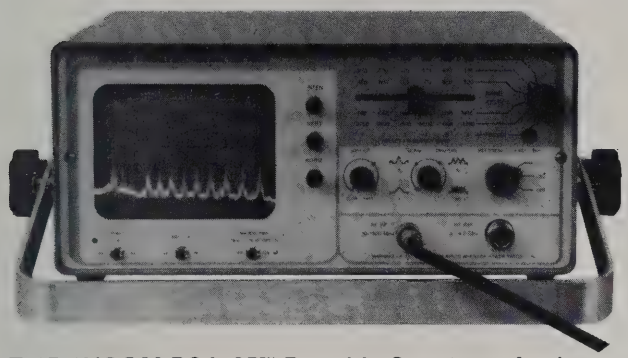

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"Anyone installing satellite TV will find the PSA-35 prevents those embarrassing moments when they turn on the customer's satellite system and get nothing."

Frank Rourk
Equinox
Alameda, California

"We use it every day, we test everything with it, too bad we didn't have it 5 years ago. We used it just the other day to solve a problem at an ABC affiliate with the ABC engineer out of New York and Compucon out of Dallas."

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munications does about $3 million in TVRO business outside the United States annually, company President Bob Behar claims delays caused by export restrictions have cost him money "a lot of times." The problem is not finding customers, he says, it's serving them before foreign competitors do. "Internationally, people like to buy American-made products because they're well-known and renowned for their quality. Especially in Central and South America, the [U.S.-made] name means a lot," he says. "But we're finding that some of the people are just not messing with our antennas or equipment anymore because they can get it directly from Japan, which has no restrictions."

'Internationally, people like to buy American-made products.'

The primary problem for TVRO exporters lies in the maze of governmental red tape surrounding TVRO equipment, which is classified as a "controlled" export item and designated "1520 A" on the Commodity Control List (CCL) of the U.S. Export Regulations. That such equipment is on the CCL means TVRO exporters must apply for an export license before the product may leave the country. Craig Lemrow, chairman of the Telecommunications Equipment Technical Advisory Committee (TETAC), explains the procedures involved.

"If you were making a number of sales," Lemrow says, "you could get what's called a distribution license, where you set up a distributor and get approval based on your estimate of sales for a number of units to be sold to that distributor, and then the distributor must provide information on what the ultimate use of the product is." Otherwise, he says, exporters must get a license for each export.

Inordinately Restrictive

The phrase "ultimate use" is the bugaboo behind most export restrictions. The International Trade Administration (a division of the Department of Commerce) must consider diplomatic concerns of the Defense and State departments as well as national security. Officials worry that dangerous technology will fall into the hands of an unfriendly nation. Since TVRO equipment is hardly lethal and the technology is widely available, however, exporters in this industry say regulations are inordinately restrictive.

Scott Zimmer, director of the international department at Echosphere, a major U.S. exporter of TVRO equipment, says unequivocally, "The U.S. regulations and export restrictions are hurting the United States, not just U.S. companies. It's a long and involved process. I would recommend that any company unwilling to make a commitment of three to five years and millions of dollars stay out of this market." He adds, "By the time the U.S. government nails this down, you're going to see mostly Asian nations in the business of exporting TVRO hardware. It won't be our business anymore."

Japan and the United States are both members of the International Coordinating Committee (COCOM), and both countries should be exporting under the same ground rules. But, as Derrick Humphries of Brown & Finn, legal counsel to SPACE, notes, "The concern of some people is that the U.S. Department of Commerce may be applying the export rules in a way its Japanese counterpart is not." This is a problem SPACE has addressed for more than two years, but the proverbial light at the end of the tunnel has only recently become visible.

The first step toward a solution was a letter sent last May by Arizona Senator Barry Goldwater to Lionel Olmer, Department of Commerce undersecretary for international trade; accompanying the letter was a technical paper by SPACE board member Clyde Washburn. "The industry will contribute over $1 billion to our domestic economy in 1985," wrote Goldwater. "It could contribute far more if the export process could be simplified and speeded up . . . The industry argues the various components are, as a practical matter, readily available from countries such as Canada, Sweden, Japan, Korea, and Taiwan, among others, and it is difficult to understand why the finished consumer product would cause any harm. The industry contends licenses for foreign television receivers are granted within a matter of days, whereas American applications require months for approval."

Kenn S. George, acting undersecretary for international trade, responded to Goldwater's letter in July. George wrote, "The Department of Commerce agrees that receive-only home entertainment TVROs pose minimal strategic risks and should be freed from control . . . Further licensing relief for TVRO products may be provided by the new amendments to the Export Administration Act, which decontrols to our COCOM allies certain 'low-level' technology products. Therefore, some TVROs, depending on their configuration and end use, may be exportable to COCOM countries without a license."

Lemrow's committee and the Department of Commerce may have more battles to fight on this issue, however. Lemrow explains, "What Commerce has to do is argue the case against [the departments of] Defense and State. I know, in fact, that Defense will say the low noise amplifier is a critical item. And then we get into State issues. We had this discussion three years ago, and State said, 'That's all well and good, but maybe the Brazilian government, for example, doesn't want such exports. One of their major ways of controlling the news is by controlling the news media. If their citizens can now get TVRO news feeds, they no longer control the news media.' "

Even if TETAC prevails over the departments of Defense and State (assuming the Department of Commerce does in fact rethink its own position on TVRO exports), Lemrow says "it will be a couple of years because of the way COCOM is structured" before the control status of

'I'm not in business to give my competition suggestions.'

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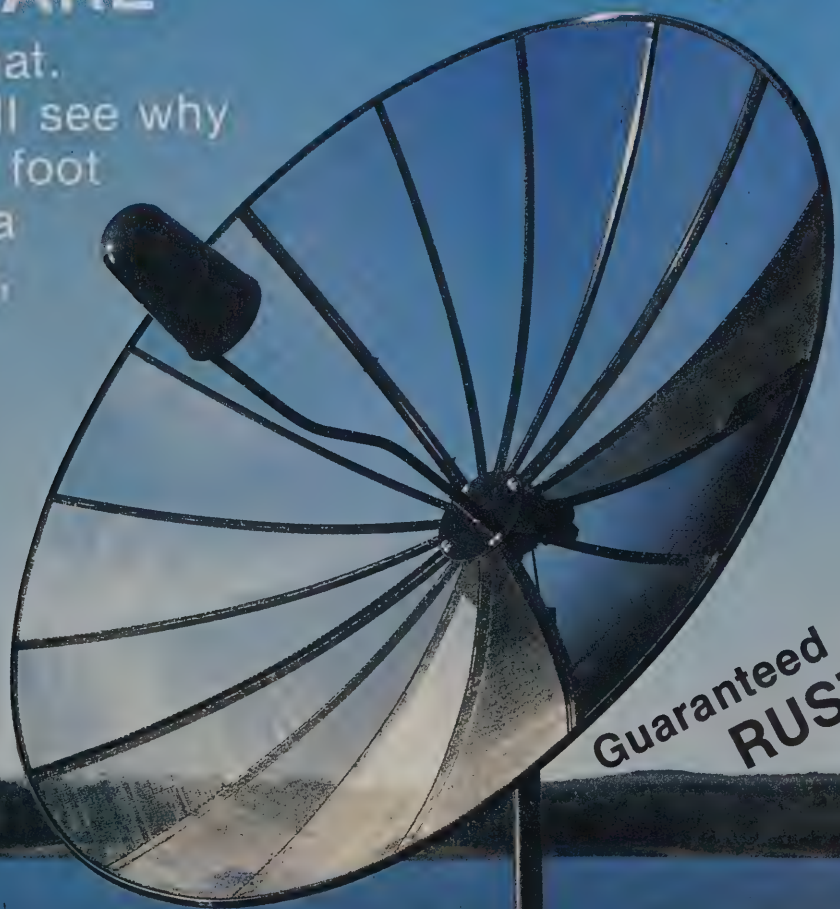

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TVRO exports is changed.

Thus, the industry's best hope appears to lie either in an easier interpretation of licensing procedures, or in legislation. Washburn's paper emphasized some key points that could bring about an easing of licensing restrictions before the control status of TVRO exporting is officially altered. Washburn wrote that "the typical home satellite receive-only reflector . . . is incapable of receiving military transmissions." He added that TVRO equipment is "still relatively crude by current standards and quite limited in its applicability to other uses."

A New Friend

Whether these arguments will sway the departments of Defense and State remains to be seen, but the industry apparently has a new friend in the Department of Commerce. Humphries says, "We believe Commerce has the capability to determine that certain TVRO equipment, depending on its configuration and end use, may be exportable to COCOM countries without a license." Read in the most positive light, Humphries says, the letter from George to Goldwater might mean licensing restrictions could be loosened prior to changing the control status. "I can't say what George means," notes Humphries, "but I can tell you how we're reading it. Hopefully, that is what he means."

'How I do it is my business.'

Until and probably even after restrictions are loosened, the export business will be competitive and secretive. One company official said, "I'm not in business to give my competition suggestions on what to do" to get into the export business. Esau Halow, a 30-year veteran of electronics exporting and owner of Esaw's Satellite Telecommunications in Texas, says, "I just don't want to give out ways to get into this business and then have some big boys come in on me. How I get the permits into Mexico, to be honest with you, is my business." Halow says he exports between $1 million and $5 million worth of TVRO equipment each year, almost exclusively to Mexico.

Even with easier export rules, some in the industry think overseas TVRO business will be hard to come by. Echosphere's Zimmer notes, "I think the international market will grow over a period of years, but it's nothing that's going to rival our domestic market for quite a while to come."

Still, before there is any chance of TVRO becoming a major U.S.-exported product worldwide, export restrictions must be altered. Humphries says, "If there's any one goal we're trying to achieve, it is to make America's export of TVRO equipment competitive in the world market." U.S. manufacturers and distributors of TVRO equipment are asking for nothing more, he says, than "the ability to compete." □

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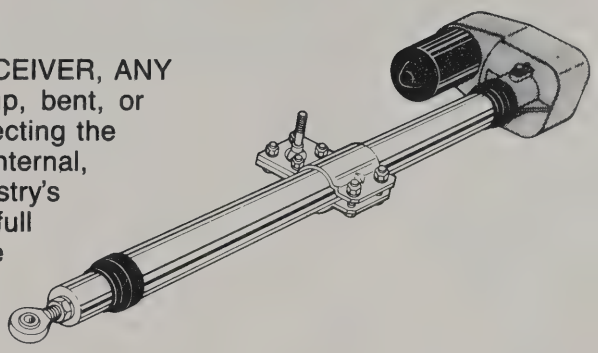

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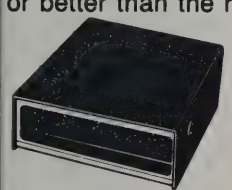

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A New Canadian Club

The Satellite Communications Association of Canada hopes to achieve the same success SPACE has attained in America.

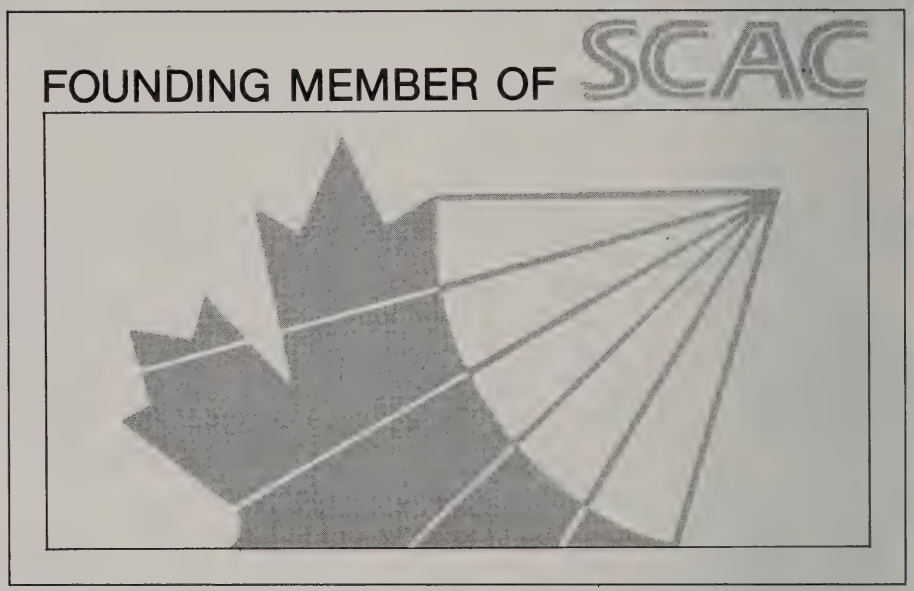
BY IAN MASTERS

THOUGH IT HAS LED A RELATIVELY silent existence since the birth of home satellite TV, Canada's TVRO industry now has a voice. The Great White North has always been ideal satellite TV country, but governmental regulation has until recently kept technological progress from reaching many Canadian backyards. Aiming to establish an effective national forum to discuss issues and find solutions to problems pertaining to Canadian TVRO issues, the Satellite Communications Association of Canada (SCAC) formed at the Satellite and Cellular Show held in Montreal last May. SCAC hopes to assist its country's industry just as SPACE has helped guide the fortunes of the home satellite industry in the United States.

SCAC isn't Canada's first TVRO trade organization. In January 1984, the Canadian Society for Private and Commercial Earth Stations (C-SPACE) formed to lobby in Ottawa, the nation's capital, on the industry's behalf. According to Samuel Singer, SCAC chairman and president of Gensat Communications in Toronto, C-SPACE was formed at the wrong time, addressed the wrong issues, and was destined to disappear.

Nevertheless, Singer and others believed an association was needed to represent the satellite industry and the estimated 140,000 Canadian dish owners—especially since the Canadian cable industry was lobbying heavily against them. At the Las Vegas SPACE/STTI show last spring, C-SPACE folded and an ad hoc committee was appointed to establish the operating structure of SCAC.

Singer says SCAC was quickly successful in establishing itself in Canada. "Now we have to concentrate on building up our regional associations," he says. "To be effective, we have to be strong in each of the five major geographic regions of the country, as well as nationally.



SCAC formed to provide an effective national forum to address TVRO issues.

"We are also making a strong effort to attract U.S. members," he adds. "About 80 percent of the equipment sold in this country comes from the States, but the manufacturers there have very little means to understand our market – and it's very different from theirs. Here television is more than a technical matter, it's a legal and cultural matter as well, and companies doing business here should be aware of that." To the same end, the association met with SPACE officials at the SPACE/STTI show in Nashville in September. "There was a high level of interest," says Singer. "We hope we can cooperate with them on the many areas of common concern, and also impress upon them the differences in the Canadian market."

While the association's stated purposes are many—including educating the public on the merits of home satellite TV, developing technical standards, training dealers, and working as a liaison with both the government and other TV industries—SCAC is currently focusing its attention on two primary goals. According to Marc Etherington, SCAC co-chairman and owner of Satelease in Aurora, Ontario, the association has a "two-pronged lobbying interest. One is the right of Canadians to subscribe to the pay service of their choice, be it of Canadian or American origin. On the other side, we hope to further amend the Radio Regulation Act to give some federal guidelines with respect to zoning."

Can't Get Cable

It isn't difficult to understand why TVRO has such an appeal in Canada. An estimated 40 to 45 percent of the country's households do not or cannot receive cable. The majority of the population resides within a strip less than 200 miles wide along the southern border, and with the exception of the metropolitan areas of Toronto, Montreal, and Vancouver, there are vast empty spaces between commu-

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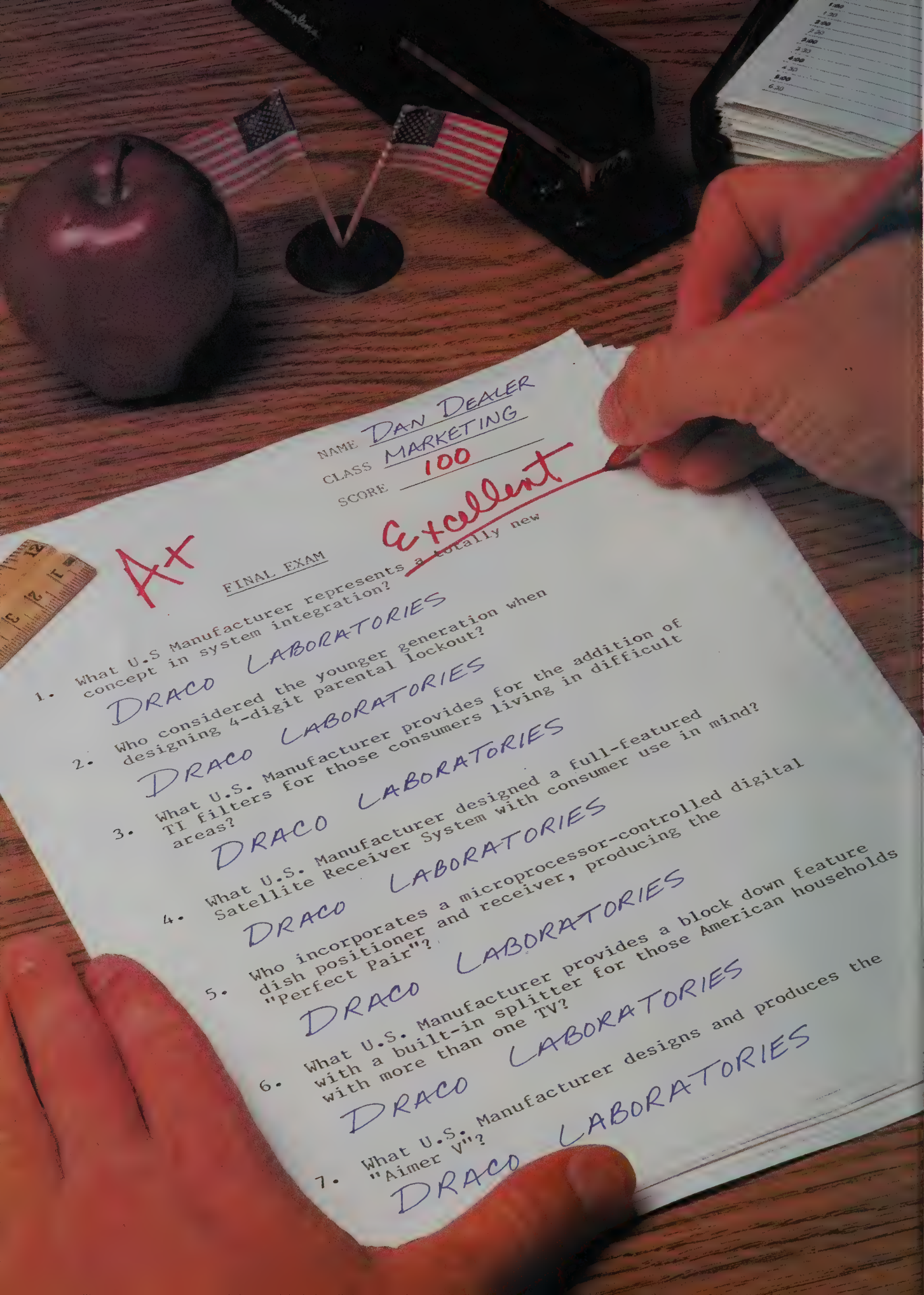

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nities. In addition, there are small towns and villages as far north as the Arctic Circle. The task of delivering any television at all, let alone a selection of signals, was monumental before the advent of satellites.

In the early days of Canadian television, the government-owned Canadian Broadcasting Corporation (CBC) linked the major population centers and gave reasonably full TV coverage to the southern portion of the country. Private broadcasters also began sending signals to this area. But the problem of supplying signals to citizens in the north remained, as did the tremendous cost of maintaining extended networks in both English and French

Canada had the first domestic satellite system.

across six time zones.

Satellite distribution was the answer to the dilemma, and Canada became the first country to employ a domestic satellite communications distribution system. Much of the early technology of satellite TV was either developed in Canada or first applied there. But simply providing a signal to remote areas didn't fulfill all of the country's needs. Canadian viewers traditionally wanted more than just the offerings of the national network – they had an insatiable appetite for U.S. programming.

An Early Foothold

Some Canadian viewers lived close enough to the border to receive American signals directly. In most communities, however, the signals from U.S. stations were either weak or out of range altogether. Because of this situation, cable TV established an early foothold in Canada, which remains the most extensively cabled country in the world. Whereas cable companies in the United States achieved their share of the market by providing specialty services, such as movies and sports, cable in Canada thrived by providing isolated viewers with programming from the major U.S. networks. So while satellite technology was being developed to distribute Canadian signals to outlying areas that would otherwise have no television at all, the cable companies were becoming firmly entrenched by funneling American programs into Canadian homes.

The infusion of "imported" TV signals caused the Canadian government, which wanted to establish a communications system that would tie Canada together and help give it a sense of cultural identity, considerable concern. There was no way a democratic government could deny its citizens a source of entertainment for which they obviously had a powerful desire. But it did seek to control the flow of foreign signals by regulating the cable industry. By government decree, Canadian signals were to be given priority over Ameri-

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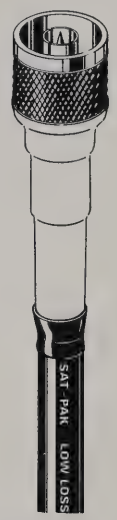

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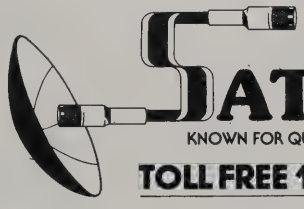
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can signals, the latter usually being allocated to the mid- or superband, which would require a converter to receive. In cases where a Canadian and a U.S. station were carrying the same program at the same time, the cable company was required to substitute the Canadian signal. In part, this was designed to protect the advertising base of the domestic stations. During this developmental period, viewers were able to watch a variety of programs, both Canadian and American, and cable companies grew in power and wealth—to the point they were able to establish a powerful lobby in Ottawa to safeguard their interests.

The Canadian government perceived the rapid growth of the home satellite TV industry in the United States as a threat to cultural sovereignty because it couldn't control the signals beaming from U.S. satellites into Canada. Like their U.S. counterparts, the Canadian cable companies also considered it a threat to their monopolistic position as carriers of premium signals. Cultural nationalism was of little concern to the cable firms, which would have been happy to bring HBO and other premium American channels to Canada. The powers in Ottawa, however, refused them permission to do so, pending the establishment of a Canadian pay-TV system that it could regulate (and on which it could impose Canadian-content requirements as it does with conventional broadcasters). The government, however, did satisfy the cable companies by banning ownership of TVRO dishes by private citizens. Some citizens, including a provincial cabinet minister, defied the ban. And although the prohibition of dishes was short-lived and rarely enforced, most Canadians were denied the opportunity of purchasing satellite TV equipment until the government officially reversed its stand with an amendment to the Radio Regulation Act in May 1983.

Defending Viewers' Rights

Etherington says one of SCAC's functions is to protect viewers' rights by making sure Canada's government stays abreast of industry issues and receives accurate and current information. "The government has become involved," he says, "and our job is to make sure that [any regulations] suit the purpose of the taxpayers. We want to make sure the interest of the taxpayers is being spoken for." The conflict with cable also concerns Etherington. "Cable wants to be the sole distributor [of TV signals]; they're lobbying for exclusive rights. They have a monopoly and an interest they've been building for 20 to 25 years, and they want to protect it. But TVRO in Canada is growing, at nearly the rate it's growing in the United States."

Singer comments, "Cable companies have no God-given right to be the only source of TV signals other than off-air. The system was set up not to serve the broadcast or cable companies, but to serve the people, and that includes people in the many areas that will never be cabled.

'Cable has no God-given right to be the only source of TV.'

"The cable companies are in a no-growth situation right now. They are going to come to the conclusion sometime that the only way to expand is by serving the outlying areas of their territories by satellite. The smaller systems are probably going to realize this first, and we have created an associate membership for them."

The organization began with 102 "founding members": eight associate members (none of them cable operators), four manufacturers, seven distributors, 52 dealers, and 31 dish owners. The founding membership drive coincided with the announcement of the association's formation at the Satellite and Cellular Show. Members who joined before the conclusion of Satellite Symposium '85, held in Toronto in July, were designated founding members. To become members, manufacturers must pay a $3,000 (Canadian) annual fee or $300 in monthly dues; distributors are charged $2,000 annually or $200 monthly. Associate members pay $300, dealers $200, and dish owners $50 annually. □

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If you're one of those skeptics who thought you'd never be satisfied with the performance of a six-foot dish, why not get more details, or even a free demonstration? Distributors contact THE STOLLE CORPORATION, a subsidiary of Aluminum Company of America, 1501 Michigan Street, P.O. Box 221, Sidney, OH 45365. Phone: 1-800-556-3203.

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Ringing Up Sales

Telemarketing enables enterprising dealers to reach out and touch some customers.

BY RICHARD WEATHERINGTON

Marc Brown

The telephone should be a natural extension of a dealer's advertising efforts.

SELLING HOME SATELLITE TV SYSTEMS requires much more than opening a store, placing a few advertisements, and waiting for the crowds to find your door. In marketing your products, you should use every modern device available in order to give your dealership a competitive edge. You already have one of the most modern and effective marketing tools sitting right in your office. Every business has a telephone, but when it comes to using it to help improve sales, most dealers have left telemarketing to the domain of big businesses that can man phone banks with large staffs. Yet even "mom-and-pop" dealerships can use the telephone to boost the bottom line.

When combined with other direct mail and advertising promotions, telemarketing has been known to increase results by as much as eight times the normal response. And contrary to popular belief, telemarketing doesn't require a complex computer system with salespeople calling names on phone lists all day long from a smoke-filled room.

Most satellite dealers come in contact with customers only when they come into the store, or when the dealer installs or services equipment. Most contacts are initiated by the customer, not the dealer. That means you must rely on ads or other promotions to draw the customer in to hear your sales presentation. Your ads, however, compete with many others, so whether one dealer or another makes contact with a potential customer often depends just as much on the luck of the draw as on skill. Sharpening your telemarketing skills should enable you to noticeably increase your share of the market.

Too often, when a potential customer responds to an advertisement, the dealer will demonstrate several satellite systems and answer a few questions. The customer, appearing satisfied, then leaves the store. If the customer gets out the door without you having obtained his name and phone number, you may be saying goodbye to a potential sale. Your marketing program is only half complete.

Sending direct mail fliers or placing ads normally yields a small return for the number of people reached and the cost involved. These methods are designed to draw a response from those people who already possess an interest in satellite TV. Once these people have responded and have been identified as potential customers, telemarketing becomes very attractive. Research has shown that your chances of turning that initial inquiry into a sale are 17.5 times better with telemarketing.

A telemarketing program is simple to start. Begin with your existing customers by making customer-relations calls. Ask how their systems are performing and offer to take care of any problems. Be sure to periodically check back. Each follow-up call does two things. It shows your customers you are interested in providing a system that performs as promised, and it gives you an opportunity to interest them in upgrading their systems. It also performs two additional functions that could pay off handsomely in the future. It helps cement a strong customer loyalty to your store and provides fertile ground for references to customers' friends. A well-served customer is your best form of advertising.

A recent market study showed that 68 percent of the customers who didn't return to their original dealer

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Sell your own paid subscriptions. Each new *Satellite ORBIT* subscriber you sell earns you a $20 commission, the highest in the industry.

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Your customer list will be kept confidentially on file for your future reference and mailing purposes. We'll even pre-address this valuable information onto free mailing labels if you'd like.

As an added bonus:

The dealer whose customer list provides the most new *Satellite ORBIT* subscriptions wins a seven-day vacation for two, covering air fare and hotel accommodations, to Hawaii, Mexico, or the Caribbean. Don't miss out on this profitable new opportunity!

Send your list to:

CommTek Dealer Program, P. O. Box 43, Boise, ID 83707. For more information, call us toll free at (800) 327-2100. The vacation bonus competition runs from July 1, 1985 to December 31, 1985, only.

for future business, or who didn't recommend that dealer to their friends, felt the dealer had neglected them. That figure is even more startling when you consider that only 9 percent didn't return to a dealer or recommend him to a friend because of the dealer's competition.

Record Vital Information

You should have a completed sales card for each of your customers. The card should list name, address, phone number, type of equipment installed, birthdays of husband and wife, and their likes and dislikes in television viewing. You should record all contacts with the customer, as well as all problems and their resolution. This information allows you to know what new equipment might interest them, what types of problems they experienced, and what new services might attract them. It also provides a way for you to send small promotional birthday gifts, for example.

The next greatest source of information for marketing comes from people who respond to your ads in person or by phone. Keep a customer registration book and ask people who come into the store to sign the register so you can keep them updated on the latest home TVRO developments. This provides you with phone numbers for follow-up contacts and a good mailing list for a newsletter or promotional mailings.

Once you develop a list of customers and potential customers, then you can use several valid reasons to make personal contact. Here are a few:

- Introduce new home satellite TV products. Keep your customers updated on new developments. A manual actuator can be replaced by a motorized unit; an old, continuous-tuning receiver can be replaced by a new, quartz-synthesized unit with remote control; and so on.
- Announce a special sale for preferred customers. Customers who have already spent money with you like to be treated like special people.
- Inform them about a pending price increase. Potential customers like to be warned ahead of time that a price hike is coming. This may be all that is needed to push a potential customer over the line.
- Promote your service department. When the warranty has expired, your service department can be a profit center. Use the phone to check on service problems and to recommend periodic checks of the system to keep it in peak condition. A $35 annual service checkup for 200 customers means an additional $7,000 gross per year.
- Promote special equipment packages. Even after a person has seen your equipment, periodic calls about special packages help you keep in contact and could head off a competitor from making a sale.
- Offer special information on new channels or other developments. Making this kind of extra effort helps set your satellite business apart from others.
- Always follow up after a sale. Don't make the customer call you, or he may be one of the 68 percent that want nothing to do with your firm after the sale.

Work on Your Delivery

Telemarketing is more than simply using the phone. It can be a positive tool or an unqualified disaster, depending on *how* you use it. If you have ever received one of those "boiler-room" phone pitches, you know how irritating they can be. Every word and nuance has been carefully rehearsed, and the operators often have all the sensitivity of a limp dishrag.

Your message should be well thought out.

The way you deliver your message will help determine the effectiveness of your telemarketing. What you are selling over the phone is not your satellite system, but your personal service and benefits for your customer, both before and after the sale. The goal is to let the person know you appreciate his business and that you'll be there after the sale. Your message should be conversational in tone, as if you were talking face to face with a friend. Practice your phone voice before starting. You want to express warmth, so avoid the uncaring monotone that is so often associated with telephone pitches.

While your message should be well thought out, it's best not to write it out

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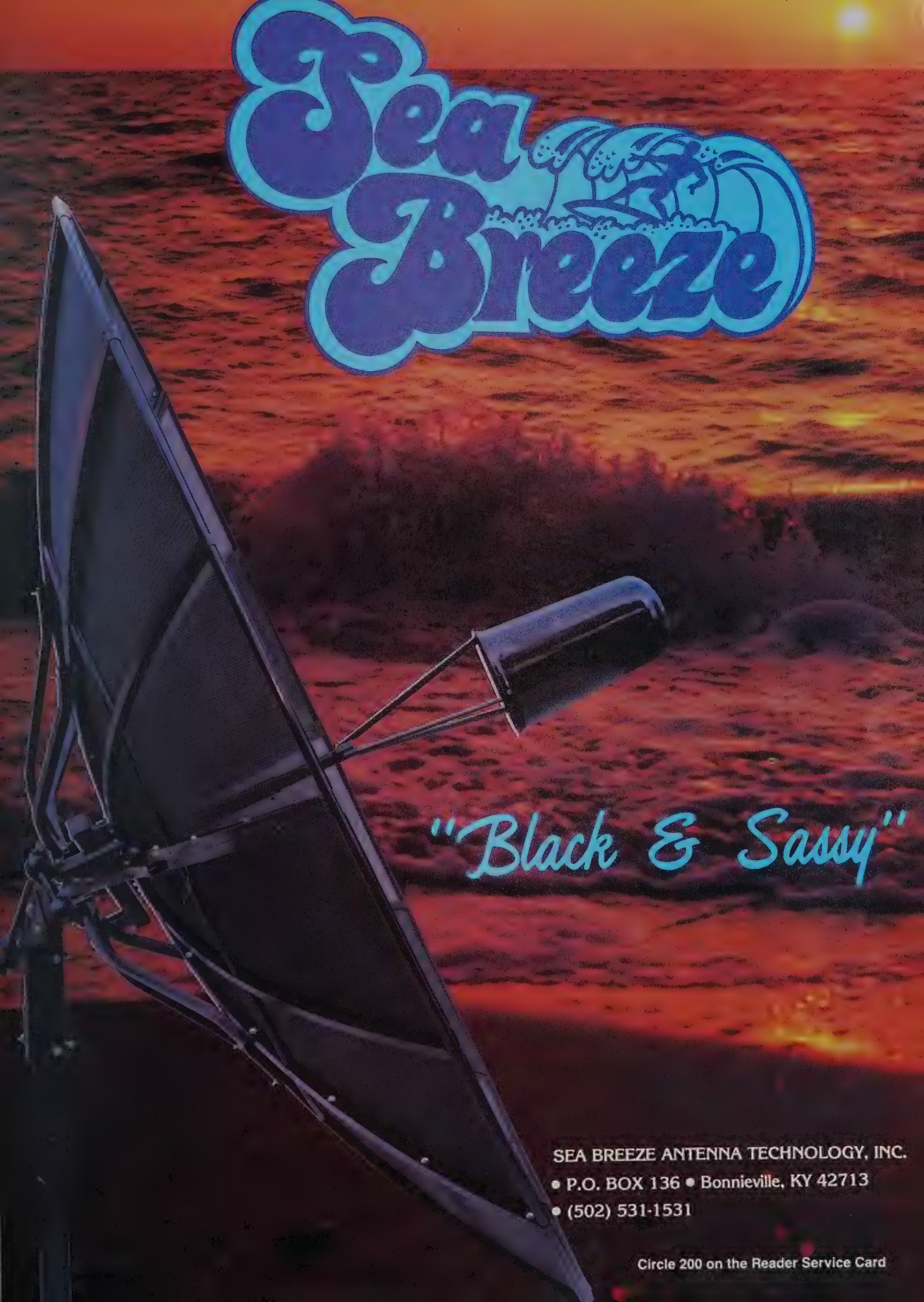

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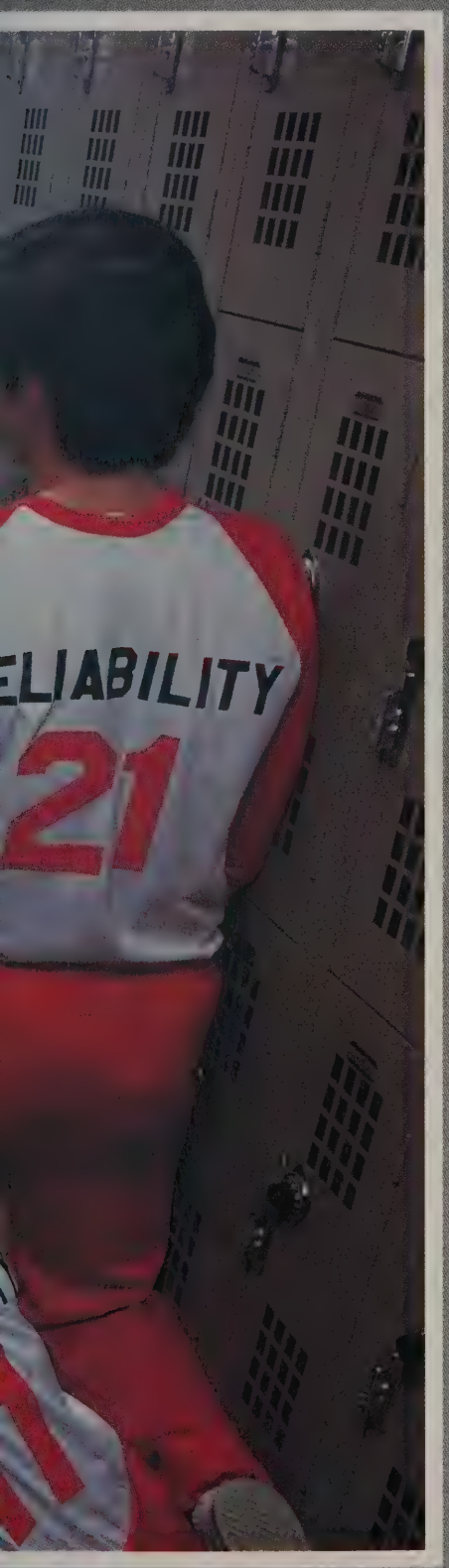

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word for word. Instead, outline the major points you want to make and keep your message brief – try to limit it to less than 60 seconds. Remember to pause at logical points. This allows the customer to ask questions or to respond. Getting the customer to interact is the most important step. Always focus the message strongly on the benefits the customer can obtain and not on how great your business is. The customer wants to know how he will benefit, not how his purchase will help you.

Paperwork is Required

Like any other marketing effort, a telephone program requires a certain amount of paperwork. Here are a few steps to follow:

• Organize your list, starting with existing customers and then adding inquiries and drop-ins. As you gain experience, include recommendations from existing customers.

Don't talk too much; become a good listener.

• Set a specific number of calls to make each day. Start small; otherwise, the size of the project might cause you to put off beginning.

• Keep a log. It provides a record so you can plot results, and it prevents you from making the embarrassing mistake of calling the same number twice in the same day.

• Follow up your call with a direct-mail circular, letter, or advertisement. Or you may want to use telemarketing to back up a direct-mail or ad campaign.

• If you are pushing a particular product and want to monitor the effectiveness of your phone efforts, give the customer a special bonus number that is good for a discount or gift. Check the customers who subsequently buy against your phone list.

• Don't talk too much. Become a good listener. Customers, if encouraged, will tell you a great deal about your business. Much of it may not be practical, but occasionally you'll get some pearls of wisdom that could really pay off.

Finally, from a legal standpoint, there are a couple of areas of concern. Check with your attorney to see if your state has laws which regulate telephone marketing. Arkansas, for example, prohibits automatic telephone dialing machines. Some 10 other states regulate home telephone sales under home solicitation laws. Also, be careful to avoid making deceptive or misleading statements. Your delivery requires much clarification, so make sure that someone else has a chance to review the points you plan to make.

Very few satellite dealers use the telephone to contact a customer, except when there is a problem. Large companies do use the telephone, but their efforts tend to be impersonal. The small dealer can take advantage of this effective marketing technique and use it to his advantage by projecting the personality and warmth that small-business men are famous for. □

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Sold on Solid-state

Your sales staff doesn't *have* to know basic electronics to sell home satellite TV systems—but it sure helps.

BY MARTIN CLIFFORD

WITH THE EXCEPTION OF THE DISH and the display in the television receiver, almost all the components in a satellite TV system are solid-state. The display is a picture tube, or a vacuum tube. It's the last vestige of the days when tubes reigned supreme in the electronics world, and now its days appear to be numbered.

Solid-state isn't new. Some 65 years ago many in-home radio receivers used a tiny crystal made of galena, carborundum, or iron pyrite to demodulate radio signals. Vacuum tubes were available but some of them cost as much as $15, a week's pay in those days. The trouble with the crystal set was the inability of the crystal to amplify. In time, vacuum tube prices came down, receivers were made with two or three tubes, speakers replaced headphones, and the crystal set was put in the attic. Vacuum tubes became the king of the electronic mountain.

The idea of amplifying a signal is simple, but putting that idea into practice is something else. Consider figure 1. Here we have a knob-operated variable resistor shunted across a battery. As we rotate the control, the current through the resistor will vary. If we could manage to turn the control at an audio rate – from 20 times per second to as many as 20,000 – the current through the resistor would also vary at an audio rate. We could call it an audio current. It's a good idea, but impractical. But before we toss it out, consider that a modification of this idea, using carbon, is in all telephones.

In either arrangement, the one in figure 1 or the telephone, we are still faced with the problem of getting amplification. As a step in that direction, look at the block of carbon shown in figure 2. You can see that the current moves through it in the direction shown by the arrows.

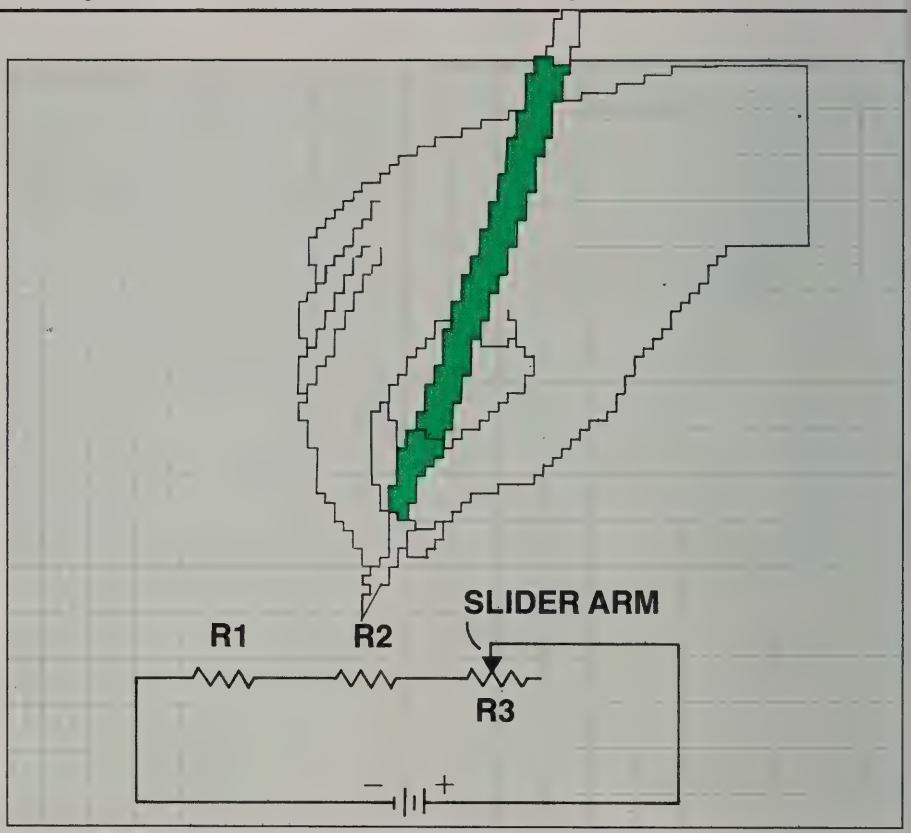

Figure 1. Resistor R3 can vary the amount of current flow in this circuit.

Figure 3 illustrates our next approach. We have a block of carbon divided into two parts. They are pressed against each other but separated by an open mesh metal screen. Between the screen and one of the carbon blocks we have inserted a signal – indicated by the generator symbol – with the generator producing an audio voltage. We can call this our input circuit. Connected to the second half of the block is a resistor (R1). The resistor is connected to a voltage source, a battery. The two blocks of carbon appear to be separated in figure 3, but actually are in direct forceful contact with the metal screen.

This system is a simple and basic idea. Current will flow from the battery, through the left block of carbon, the wide open spaces of the wire mesh, the second block of carbon, the resistor, and back to the battery. The voltage of the AC generator will vary that current since the metal screen is right in the path of current flow. The current moves through resistor R1, producing a voltage across it. That voltage will be a replica of the voltage supplied by the generator but will have a much larger amplitude. What we have here, then, is amplification.

Note what has happened. We have used the small signal voltage of the generator to produce a much larger voltage across the resistor. We haven't actually amplified the original signal, but we have produced a replica of it in much larger form. And

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Where all the channels are

Every channel on every satellite is individually factory programmed prior to delivery. All audio and video information is ready for recall automatically. As new channels are added they can be added to the program. The 9900 is ready to receive individual channel selection information for up to 864 separate selections.

All about stereo Hi-Fi sound

5 audio modes, factory programmed to individual transponders, deliver the right sound system automatically when a channel is selected. Dozens of audio subcarriers can be added to the program for audio only hi-fi enjoyment (including Dolby® Noise Reduction) in addition to television.

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L U X O R 9 9 O O

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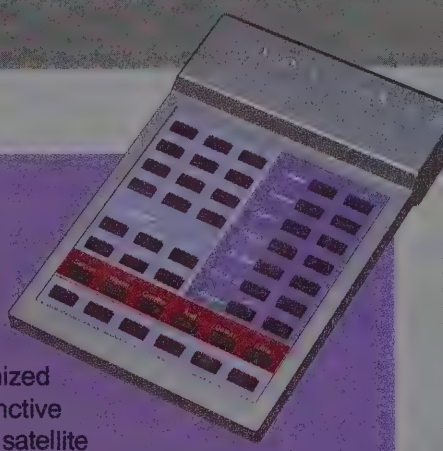
So advanced it's as easy to operate as an ordinary TV

The front panel LED display tells you what satellite you're on, what channel you're watching, what sound system you're receiving and a signal bar graph indicates signal strength. All functions are controlled from the hand-held wireless remote.

The sky is alive with the sound of music

Luxor loudspeakers bring new life to TV audio, mono or stereo, and much more. Satellite audio sub-carriers broadcast a wide range of music for audio only. These optional high quality 6-speaker sets (3 per side) are available in passive or active models with sound power up to 40 W per channel. They are specially magnetic shielded for close location to your TV set.

Simple, clear and color-coded



The Luxor hand-held remote is clearly organized to make life easy. Distinctive color sections present satellite and channel selection functions, tuning functions and switching functions. For most viewing however, video and audio delivery will be automatic. When a channel is selected, the exclusive Luxor Micro-Step™ Tuning System (LMS) automatically seeks out the right signal within that channel's frequency. The receiver automatically compensates for any form of frequency drift due to climate or transponder variances.

An internal TI filter can be assigned to individual channels to minimize terrestrial interference.

And a discrete parental lock-out can eliminate one or more individual channels on a single satellite, as desired.

That's it. Advanced Luxor technology has produced a system so simple to operate, yet complete enough to satisfy the most fanatic videophile and audiophile. For the technician, the Luxor 9900 even has its own diagnostic system built-in and ready at the touch of a button.

Here is the best of Scandanavian design and high technology. Because Luxor is a leading European manufacturer of satellite products, TV's, audio hi-fi systems, and computers, the company is able to combine these technologies in the advanced 9900 series. After all, Luxor has been a leader in radio, television and electronic technology since 1923.

The perfect companion

The Luxor Model 9995 Block Satellite Receiver is designed and built to function as an add-on receiver to Luxor 9900 multiple TV's installations. This low cost manually operated receiver offers independent channel selection for TV's located throughout the house. The 9995 can also be used as a stand-alone receiver for both C-Band and Ku-Band reception.

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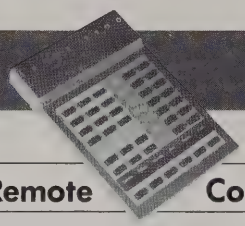

9900 Block Receiver

Control Functions

+ Integrated satellite receiver and antenna controller.
• C-band (4 GHz) and Ku-band (12 GHz) capable. Remote control switchable.
• Satellite direct access.
• Transponder direct access.
+ Built-in A/B switch.
+ "Normal" button return to factory pre-set values.
• Built-in polarotor drive.
• Built-in RF modulator.
• Non-volatile memory unaffected by power outages.
• Remote sensor interface.

Programs

+ Factory programmed for individual transponders on each satellite.
+ Automatic correct audio system factory programmed for each satellite and each transponder.
+ Program capacity up to 864 individual selections, audio video matched and fine tuned.
+ Self-diagnostic microprocessor.
+ LED display of satellite, channel, audio system and signal strength

Video Functions

+ Luxor Micro-Step™ tuning system (LMS).
• Baseband audio and video output for VCR or monitor.
+ Baseband input for other video sources.
• Built-in polarity control.
+ Built-in programmable TI filter.
• Raw video (unfiltered, unclamped) for descrambler connection.

Audio Functions

+ Audio subcarrier frequency read-out.
• Wide/Narrow Bandwidth selection.
+ Remote audio volume control.
+ Remote stereo balance control.
+ Remote Dolby® on/off
+ 5 audio modes–2 mono, 2 matrix, and discrete stereo. Automatic multiplex selection.
• Built-in stereo processor.
+ Direct loudspeaker drive.

9902 Remote Sensor

• Controls satellite system from any room.
• Low-cost add-on for other TV's.
• Comes complete with hand-held IR remote control.

9901 Remote Control

+ Full-function, color-coded IR wireless remote control.
+ Remote ON/OFF
+ Discrete parental lock-out for individual channels.
+ Remote mute.
+ Volume control.
+ Stereo balance.
• Channel UP/Down.
+ Video fine tune.
+ Audio fine tune
• Antenna fine tune.
• Satellite selection.
• Channel selection.
+ Divided into 4 easy-to-read segments: Satellite selection, channel selection, tuning functions, switching functions.

9904 Actuator Interface

+ 36V power supply to antenna drive.
+ Surge protected.
+ Voltage spikes protected.
+ Design coordinated with 9900.
+ Can be wall-mounted out of sight.

9906/9907 Stereo Loudspeakers

+ Passive or active models.
+ Up to 40 W per channel.
+ 3 elements per side; tweeter, mid-range and woofer.
+ Magnetic shielded.
+ Automatic ON/OFF.
+ LED indicators; standby and active.
+ Complete with line cable feed.

9995 Block Satellite Receiver

+ Add-on "slave" to 9900 multiple TV's installations.
+ Can function as a stand-alone block receiver; C-band and Ku-band reception.
+ Manually operated channel selection.
+ Video fine tune. AFC defeat.
+ Built-in V/H switch.
+ Built-in antenna switch for satellite or local reception.
+ Preprogrammed audio frequencies 6.2 and 6.8 MHz.
+ Audio frequency selection 5.0 to 8.0 MHz.
+ Wide/narrow audio bandwidth selection.
+ Raw video output (unclamped, unfiltered) for descrambler connection.
+ External TI filter input.
+ Skew control.
+ Polarotor One control output.

+ Denotes new features available only on 9900 series products.

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Designed and constructed for continuous reliable performance, each Luxor unit is individually inspected and tested against all specification requirements. The Block Downconverter (30 dB gain min.) is used in conjunction with an LNA. The LNB Block Downconverter (60 dB gain min.) is an LNA and a Block Downconverter in one compact package. Each unit is weather-tight, rust-proof and fully warranted.

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although we used a generator, we could have used a microphone, or a record player, or any other electrical sound source. The basic idea is a good one, but there is just one problem: it won't work.

There is only one way to overcome it, and that is to find a substitute for the carbon. We need a different element that will let us control the current flow through it. There are a number of such substances, the most notable being germanium and silicon. Silicon is an abundant element. You get your feet or shoes covered with it whenever you walk on a beach.

We can start with small blocks of silicon, as shown in figure 4. If the silicon is extremely pure, better than

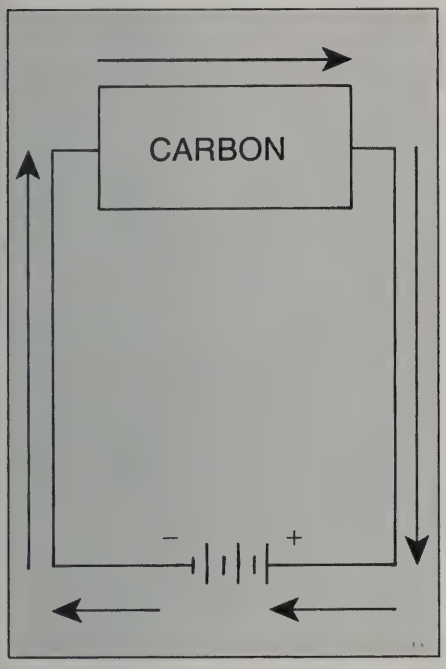

Figure 2. The carbon conductor.

99 percent, it will act as an insulator and will belong to the glass and plastic family from the viewpoint of current conduction. But silicon is rarely pure in its natural state, so it will permit the passage of current, the amount depending on the nature and quantity of the impurity. Under these circumstances we can hardly call the silicon an insulator, but it doesn't permit current flow as easily as copper or silver, either. Since it seems to be about halfway between these two extremes – good current conductivity or no conductivity at all – we call it a semiconductor. A semiconductor, then, is a substance somewhere between insulators and conductors in conductivity. There are quite a few crystalline substances that act this way.

Doping the Crystal

The problem with the natural

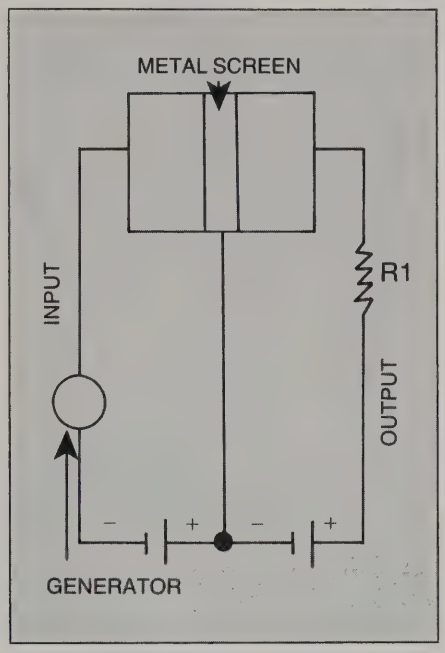

Figure 3. Divided double diode.

impurities present in silicon is that we have no control over the type or amount. So a bit of silicon may conduct moderately well, too much, or not enough. Consequently, our first

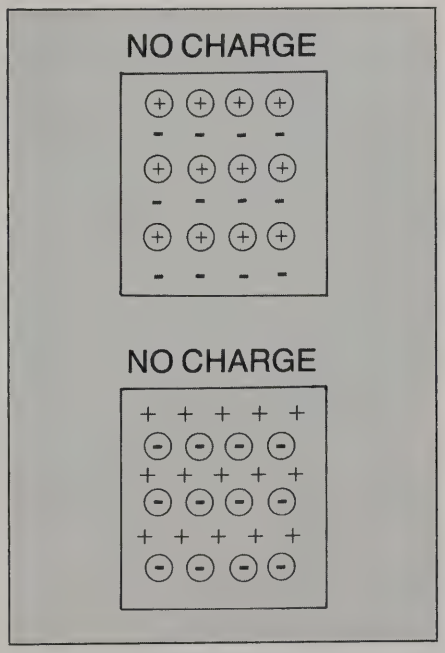

Figure 4. Uncharged silicon blocks.

step toward an amplifying diode is to make the silicon as pure as possible. In this state it's an insulator. A voltage applied across its ends will not result in current flow. →

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We can get the silicon to conduct by adding extremely small, controlled amounts of an impurity such as antimony. We call it an impurity

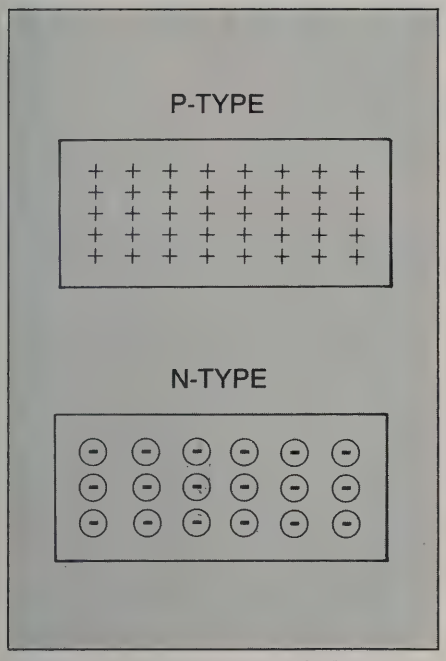

Figure 5. N and P blocks of silicon.

only in the sense that we have added it to our purified silicon. By itself the antimony can be highly pure.

The antimony joins chemically with the silicon. During this process,

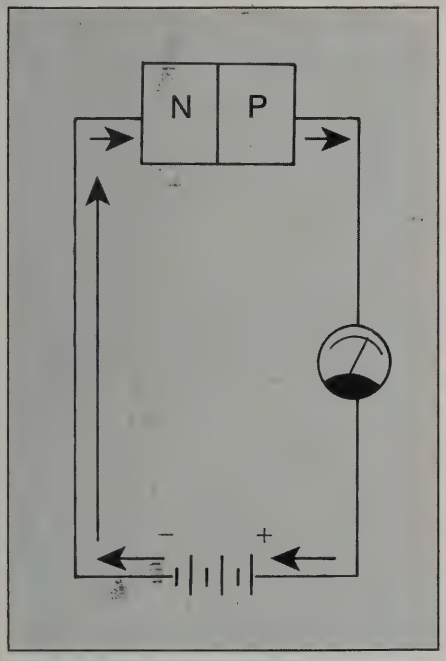

Figure 6. Forward biasing.

however, it contributes electrons to this chemical marriage, and so we now have a block of silicon/antimony with spare electrons. Since all electrons, without exception, carry a negative charge, we call it N silicon.

Another element we can add to silicon to make it conductive is boron. Unlike antimony, boron is electron-poor, so when we mix it with silicon it borrows electrons from the silicon, left and right. The result is a block of silicon that is short of electrons. We call this block P silicon, with the letter P representing positive.

This isn't new or different. A battery has a negative plate identified as N, and a positive plate named P. The negative plate is electron-rich; the positive plate electron-poor. We can show P silicon and N silicon as in figure 5.

The Semiconductor Diode

If, as in figure 6, we move a block of N-type silicon so it makes good physical contact with a block of P-type, and connect a battery as indicated—supplying a voltage called bias—we will have a semiconductor diode, pushing us right back to where we started. Current will flow through this diode, so called since it uses two different kinds of silicon, N and P

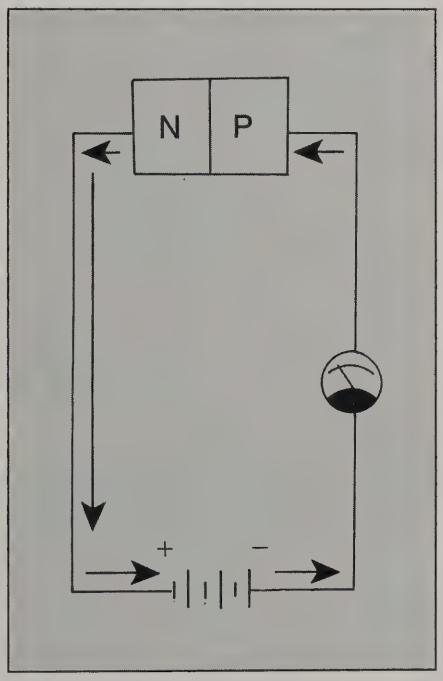

Figure 7. Reverse biasing.

types. This kind of biasing is called forward since it results in current flow. If we transpose the battery, reverse biasing the semiconductor diode, as shown in figure 7, practically no current will flow through it. The only thing the turning of the battery has done is show us we can use it to control current flow.

Instead of working with a diode,

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we can make a triode as shown in figure 8A. Here we have sliced a block of N-type semiconductor in half, and put a very thin slice of P-type in between the two, forming a sort of semiconductor sandwich. We can reverse the procedure by using a block of P-type, slicing it, and inserting a thin section of N-type semiconductor. To emphasize the difference between the two we call one an N-P-N

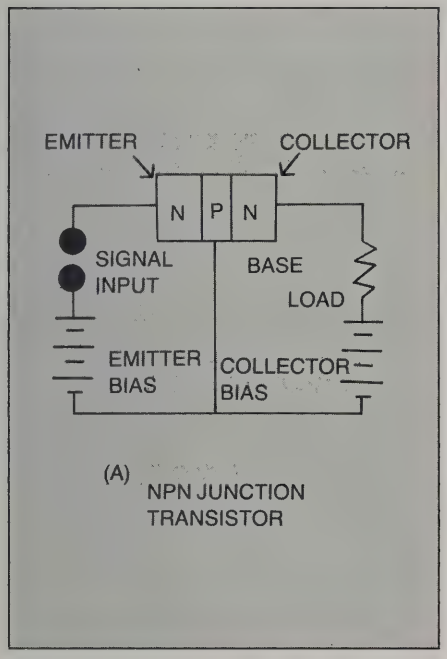

Figure 8A. An N-P-N transistor.

and the other a P-N-P (fig. 8B). That thin slice in both examples may not look like much, but it is the key element that changes the diode into a component that gives amplification.

The semiconductor triode, known as a transistor, is really a pair of diodes placed back to back, as shown

We also have a signal input and signal output. Note the two circuits, the one in A and the other in B in figure 9, are practically identical except for the polarity of the batteries.

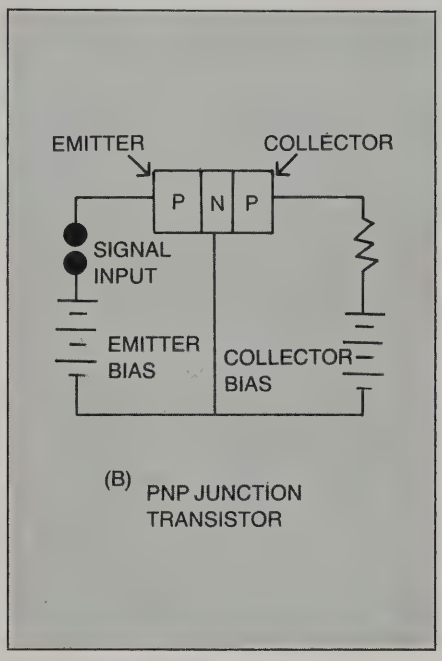

Figure 8B. A P-N-P transistor.

Start with the N-P-N transistor in figure 8A. A pair of terminals, a port, has been inserted and is called the signal input. On the other side of the transistor, a resistor has been included and is called the load.

If you examine the first half of the transistor you will see it as a reverse-biased diode. It consists of the N-P section of the transistor, the signal input terminals, and the bias battery. The other half of the transistor is also a reversed biased diode made up of the P-N block, the load (a resistor),

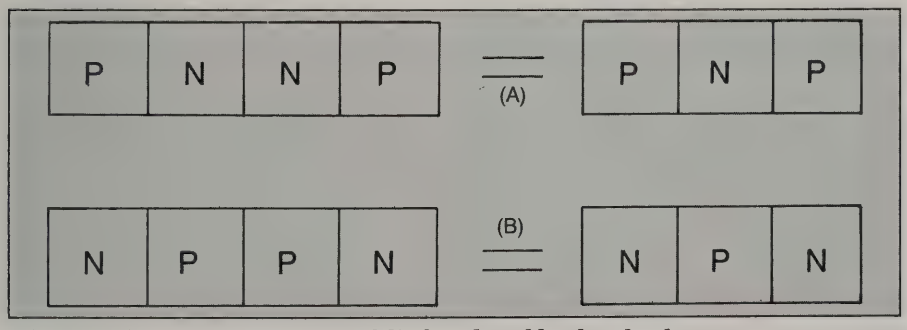

Figure 9. A transistor is a pair of diodes placed back to back.

in drawing A in figure 9. So what we are doing, in effect, is making a triode out of those diodes as shown in drawing B. And since we have two diodes, we need a pair of bias batteries, one for each, following the arrangement shown in figures 8A and 8B.

and another bias battery. To make it easy to identify the parts of the transistor, the first N section is called the emitter, the P section in the middle is the base, and the final section is the collector.

If we now connect a signal source

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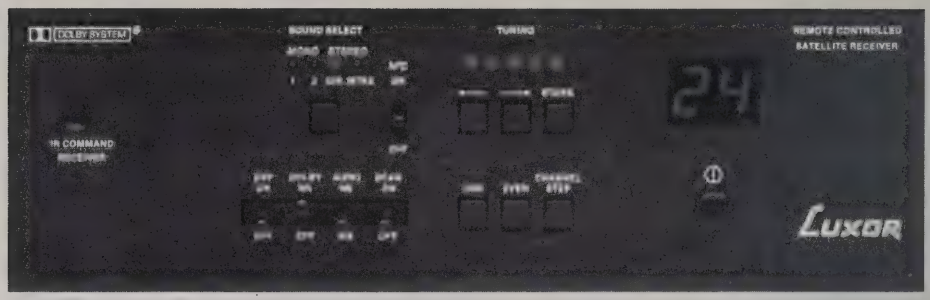

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between the terminals marked signal input, that signal will be an alternating voltage, either opposing or aiding the voltage of the battery, depending on the signal's polarity at any moment. As a result, we will have a current flowing from the battery, through the signal input, through the emitter to the base, and from the base

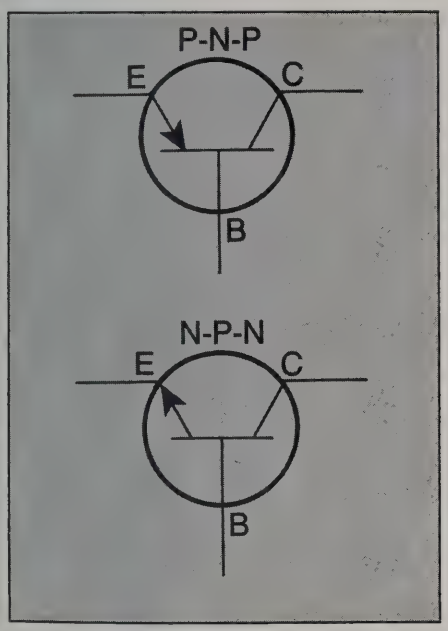

Figure 10. Symbols for transistors.

back to the battery. The current will not be steady DC, but will vary with the input signal.

An Unsteady Current

The current flow acts as if we had increased or decreased the resistance of the base, thus permitting a current to move from the minus terminal of the collector's bias battery to the base, through the P-N section of the transistor, down through the load, and on to the plus terminal of the bias battery. This current will not be a steady one. It will vary in frequency, and that frequency will be the same as the one across the input. And by flowing through the load resistor, it will produce a varying voltage across it.

The shape of this voltage will be exactly the same as that across the signal input, and so we will have amplification. Note that we did not expand or enlarge the original signal. All we did was take the current supplied by a battery – the collector bias battery in this case – and made it fluctuate with input signal. By sending that current through a resistor we were able to produce a voltage. The circuit shown in figure 8B, using a P-N-P transistor, is exactly the same except that the batteries have been transposed.

Direction of Current Flow

The movement of current in a circuit external to a battery is always from minus to plus. The flow of current is like a wheel; we can't say any point on the wheel turns first. But for convenience's sake let's assume current starts at the negative terminal of a battery. In the case of the N-P-N circuit we can start at the minus terminal of the collector battery, with the current flowing from there up to the base, over to the collector, and then down through the load resistor. In the battery the current moves from plus to minus, and then starts its trip again. In the P-N-P circuit the current flows in exactly the opposite direction.

Transistor Symbols

Electronic symbols are used for transistors just as they are for other electronic parts. The symbols for P-N-

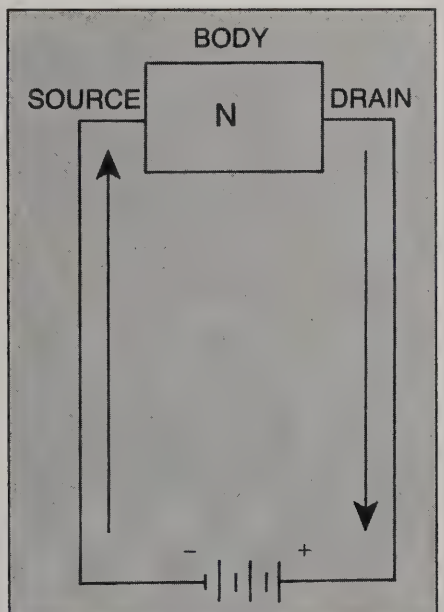

Figure 11. Beginning to build an FET.

P and N-P-N transistors are in figure 10. The letters E, B, and C are abbreviations for emitter, base, and collector. The symbols are the same except for the emitter. In the P-N-P the arrow points inward; in the N-P-N, outward. Satellite TVs are solid-state, another way of saying they use semiconductor diodes and transistors. Since the invention of the transistor a

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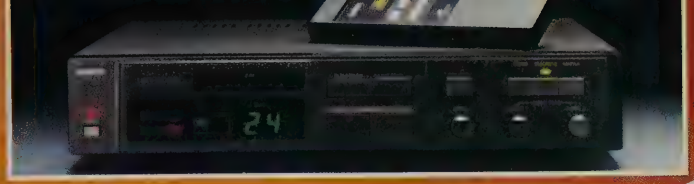

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large number of variations have appeared. One of the variations produced low-cost coaxial cable, which connects the low-noise amplifier (LNA) to the in-home satellite receiver. In the LNA a type known as the gallium arsenide field effect transistor (popularly known as a GaAs FET) is used. Difficult to make,

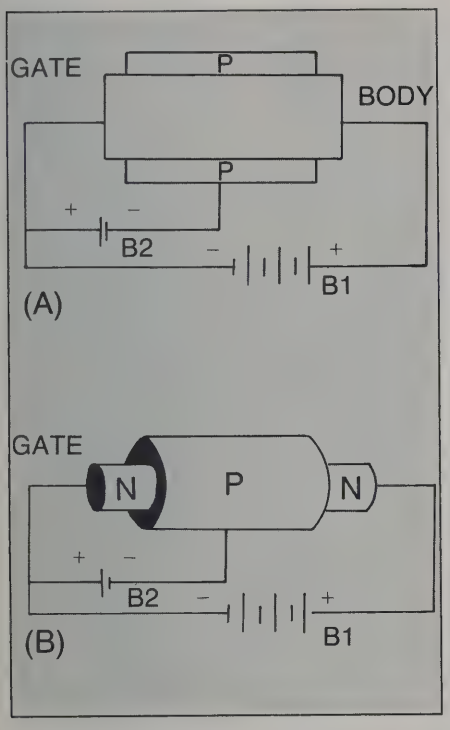

Figure 12. A completed FET.

hence fairly expensive, they are low-noise types.

The Field-effect Transistor

The field-effect transistor is also known as a unipolar transistor. Its construction is quite different from that of the usual P-N-P or N-P-N types. The FET begins with a core of N-type semiconductor material called the body. Attached to it are two leads: the source and the drain as shown in figure 11. The current flows from the negative terminal of the battery, through the source and the entire volume of N-semiconductor, exits via the drain, and then goes back to the battery.

Figure 12 shows the next step. The body is surrounded by a jacket of P-type semiconductor material identified as the gate. The illustration shows two batteries: the original battery, marked B1, and another, B2, connected between the gate and the body with a second battery supplying reverse bias. As a consequence, very little current flows between the gate and the body. Our goal is to control the flow of current from the source to the drain, but the reverse biasing supplied by battery B2 keeps the current quite small and at a steady level.

And now, as shown in figure 13, we can rearrange the FET. What we have done is include input and output terminals. The input can be a signal source; the output can be across the resistor. Since the input signal varies, its effect is to add to the voltage of battery B2 or to oppose it, depending on whether the signal is plus or minus at any particular moment. This voltage variation permits more or less current to move from the source to the drain, but the amount of that current depends on the input signal voltage. If we connect a resistor across the output terminals, that current will develop a voltage across it, a replica of the signal voltage but much larger.

The Need for Transistors

Transistors offer a number of advantages, and it is difficult to imagine a satellite television system that could exist without them. They can

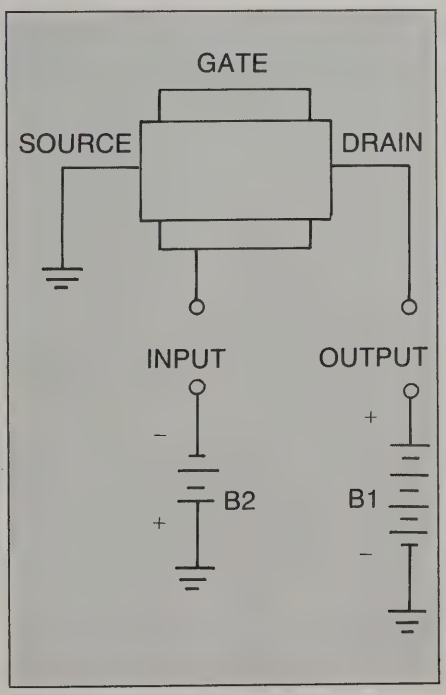

Figure 13. A basic FET circuit.

be made so small, that thousands of them can be etched onto a bit of silicon smaller than a postage stamp. They are lightweight and require only small amounts of current. They can operate from low voltages, and, with the exception of power transistors, remain cool while they do their work. □

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Uniden's UST Receivers

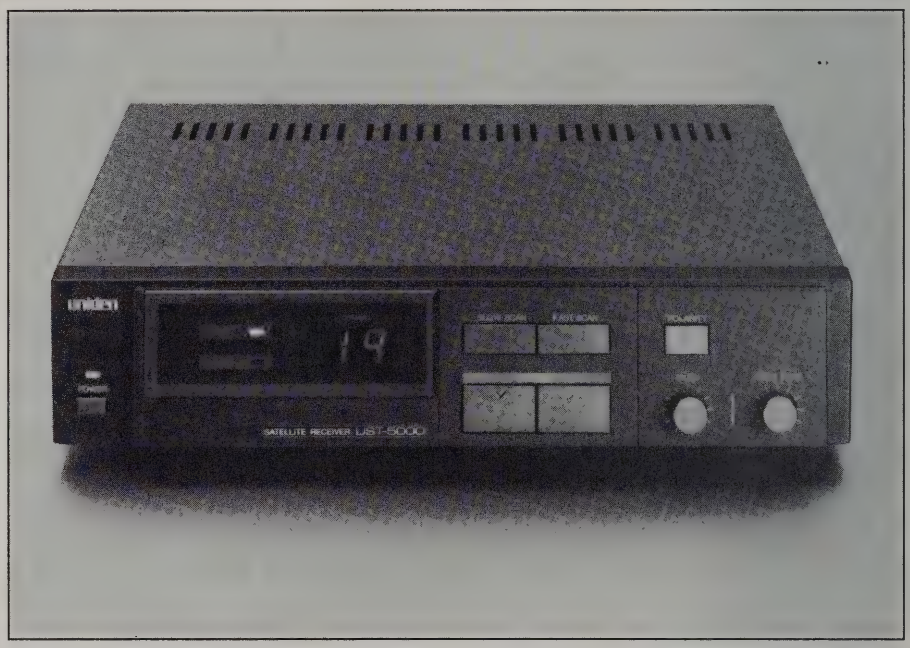
Aggressive marketing of these slick units underscores this Japanese giant's commitment to the U.S. market.

BY MARK LONG

WITH THE INTRODUCTION OF ITS second generation of home satellite TV products, Uniden Corporation of America has affirmed its intent to seize a commanding share of the exploding home satellite TV market. Uniden's newest satellite TV receivers were developed in Japan under the direction of one of the world's leading microwave design engineers, Dr. Yoshihiro Konishi, who now serves as the president of the Uniden Satellite Technology Group. To achieve the lowest consumer prices possible, Uniden is manufacturing these products at factories in Hong Kong and Taiwan.

An acknowledged leader in the field of consumer electronics manufacturing, Uniden Corporation of Japan has been creating technologically advanced, convenience-oriented personal communications products for more than 20 years. Since the 1970s, Uniden has consistently been one of the world's largest manufacturers of CB radios. The company is also known for producing top-notch radio receivers, scanners, cordless telephones, radar detectors, and two-way radios.

Uniden became interested in North America's home satellite TV industry just three years ago and quickly focused its expertise on developing satellite TV products, enabling the organization to introduce its first generation of receivers in June 1984. Only six months later, Uniden's American subsidiary had captured a significant share of the U.S. receiver market. Uniden's success resulted not only from its creation of a line of attractively priced products, but also depended heavily on a strong promotional campaign that served as the initial introduction for millions of Americans to home satellite TV.



Uniden

The UST-5000 offers a touch control front panel and LED channel display.

To support the introduction of its latest line of products, Uniden has conducted a broad-based marketing campaign that included a 1985 advertising budget of nearly $8 million, a full line of point-of-purchase displays, and new collateral material. To attract the attention of industry sales personnel, Uniden has also developed a distributor/dealer incentive program that features trips to Hawaii, Acapulco, and Japan.

Impressive Lineup

The latest Uniden receivers – models UST-5000, -6000, and -7000 – utilize block downconversion technology to provide more stable TV picture reception and enable multiple users within a single household to independently access various satellite TV programs from a common satellite antenna. The three models utilize a block IF range of 950 to 1450 MHz and have been designed to operate in conjunction with the UST-441 LNA and UST-550 block downconverter, or alternatively, the UST-900 LNB.

With an attractive retail price of $349, the UST-5000 incorporates a touch control front panel with LED channel display, adjustable audio, channel up and down, fine tuning skew adjustment, polarity control, and vertical and horizontal polarity indicators. Expanding on the basic design of the UST-5000, the UST-6000 offers a number of other features, including high-quality stereo audio reception circuitry and infrared wireless remote control for basic receiver functions.

The UST-7000 has become the flagship for Uniden's fleet of block downconversion receivers. As Uniden's top-of-the-line satellite TV product, the UST-7000 features complete integration of actuator drive, polarization control, stereo sound processor, and satellite receiver all in one streamlined, stylized package that can be operated with a highly

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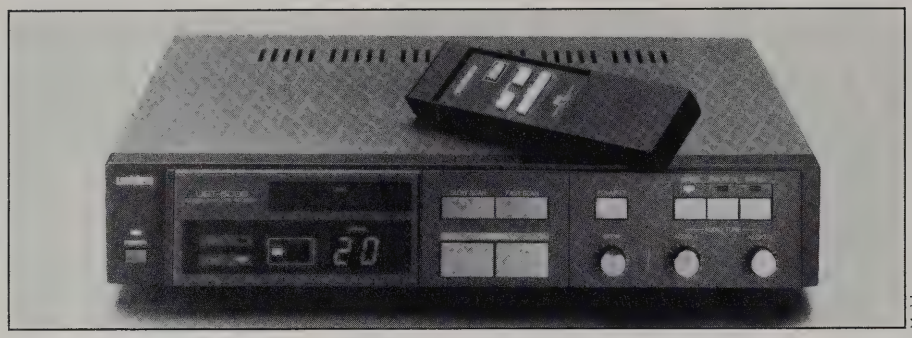

The UST-6000 has high-quality stereo audio reception circuitry built in.

versatile hand-held infrared remote.

Like the UST-5000 and -6000, the UST-7000 receiver utilizes a frequency synthesizer circuit that is linked to a highly stable master crystal oscillator. The receiver channel selector causes the synthesizer to tune the receiver in precise, 20 MHz steps that correspond to the frequency spacing scheme adopted by all of the American and Canadian C-band satellites. Because of the high level of stability generated by the Uniden synthesizer circuitry, the Uniden receivers have no AFC controls or video fine tune adjustments. During the course of our product evaluation, we measured the amount of frequency drift of the UST block downconverter and receivers to be less than ±100 kHz when exposed to an operating temperature shift of more than 30 degrees F over a 24-hour period. This level of stability is far superior to what conventional single-conversion receivers have obtained in the past.

The UST-7000 receiver has also attained a high level of excellence in video. The receiver's saturated color performance was judged to be very good. There was also a noticeable absence of "tearing" when viewing superimposed, computer-generated graphics. Another plus was the sensitivity of the receiver when responding to signals emanating from some of the weaker satellite transponders.

Superb Stereo

The superb audio reproduction of both matrix and discrete stereo audio subcarrier services is another high point of the UST-7000. Audiophiles will find the remote control for the UST-7000 will allow them to maximize their listening pleasure in a number of ways. Operators can select an appropriate sound level, tune into just about any stereo or monaural audio subcarrier service carried on satellite, or even activate dynamic noise reduction (DNR) and narrow audio passband filters in order to optimize the audio fidelity of just about any available auxiliary subcarrier service. We especially appreciated the inclusion of an audio mute control on the remote control, which provides operators with the ability to "zap" the sound during commercials carried by advertiser-supported networks.

In addition to its numerous audio features, the infrared remote provides users with complete control over the selection of the desired satellite and satellite channel. The hand-held remote does have its limitations, however. Operators will find that the infrared remote control can only access the system when it is physically located to the front and center of the receiver's front panel. To select the desired satellite, channel, or audio subcarrier, the operator will also need to be in a position from where he or she can read the digital displays on the front panel.

A multipair cable connects the UST-7000 to a separate power supply that drives the accompanying Uniden UST-705 antenna drive system. The UST-705 actuator operates silently, without the annoying motor whine that accompanies the movement of many antenna jacks. We were also impressed that the UST-705 allows manual adjustment of the antenna's position with pinpoint accuracy.

Like many of the latest satellite TV receivers, the UST-7000 provides access to the second IF of 70 MHz via F connectors mounted on the rear panel. A coaxial jumper is supplied to complete the 70 MHz IF loop-through. Alternatively, the jumper can be disconnected and a variety of 70 MHz IF accessories can be connected to the system if they are ever required. Such accessories include terrestrial microwave interference

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Earth Terminal TV, Ltd.
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Manchester, NH 03102
603-625-6659

SRC Industries
773 S. Oregon St.
Ontario, OR 97914
Sales Dept. 503-889-7261
Wilsonville, OR 97070
503-682-2467

Cumberland Electronics
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Morgantown, WV 26505
304-292-8439

Wisconsin
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Rt. 2 Box 65, Highway 14 E.
Richland Center, WI 53581
608-647-4643

For further information contact
James Johnston
Executive Director, SatNet/ISDA
219-842-3105

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The UST-7000 incorporates major system functions in one integrated package.

filters, descramblers, and threshold extension filters.

UST-7000 Design Limitations

While the Uniden UST-7000 is a first-class receiver and offers many advantages, it has one design limitation which prohibits its use in a few specialized applications. Because the UST-7000 has no video fine tune control, the operator cannot tune into satellite transmissions which are offset in frequency from the 20 MHz standard used by American and Canadian satellites. With the launch of Mexico's Morelos satellite this past summer, there are now four TV program services being transmitted on channels which are offset in frequency from the 20 MHz standard. Since none of the block downconversion Uniden receivers have a video fine tune control, it is not possible to adjust the receiver for best reception of these services. Active channels on Morelos consist of three Spanish-language TV services from Mexico City and one English-language TV service from the CBS affiliate station KFMB in San Diego. Several other Spanish-language services will be added in the months ahead. While many TVRO viewers may have no desire to receive this satellite, others, especially those of Latin American ancestry, will have more than a passing interest in viewing these programs. Dealers in Texas, Florida, and Southern California should keep in mind that more than 26 million U.S. residents presently speak Spanish.

Even with the present restrictions on the exportation of earth station hardware, a considerable amount of TVRO equipment is being shipped from U.S. distributors and dealers to overseas locations for reception of international and foreign domestic satellite systems. Since few of these overseas satellites use the 20 MHz spacing scheme employed by American and Canadian satellites, the lack of frequency agility in the UST-5000, -6000, and -7000 receivers severely limits or prohibits their effective use at other locations around the world. The shipment of these receivers overseas could result in some very unhappy foreign customers.

While most block downconversion satellite receivers utilizing the block IF range of 950 to 1450 MHz can be easily adapted for 12 GHz satellite reception with the addition of a separate Ku-band LNB, the latest Uniden receivers do not have the frequency agility necessary for dealing with the various Ku-band satellite frequency schemes currently in use. Dealers are advised to suggest alternate reception equipment for those customers that want dual-band compatible equipment.

The frequency agility limitation aside, the Uniden UST-7000 is a high performance satellite receiver that encompasses all major system functions in one integrated package. Many consumers will be delighted with the way Uniden has configured the hand-held control to permit almost total operation of the system from the comfort of one's easy chair. Backed by a corporation with 20 years of experience in assisting vendors and consumers with their problems, dealers should have ample manufacturer support for this fine product during the years ahead. □

Mark Long is author of the 1985 World Satellite Almanac *and* The World of Satellite Television.

PRODUCTS: UST-5000 satellite receiver
UST-6000 satellite receiver
UST-7000 satellite receiver
COMPANY: Uniden Satellite Technology
8050 Castleway Drive
Indianapolis, IN 46250
(317) 841-6340
CONTACT: Bill Stark
AVAILABLE: Through authorized dealers
SUGGESTED RETAIL PRICE: UST-5000: $349
UST-6000: $599
UST-7000: $999

The Avcom PSA-35 Spectrum Analyzer

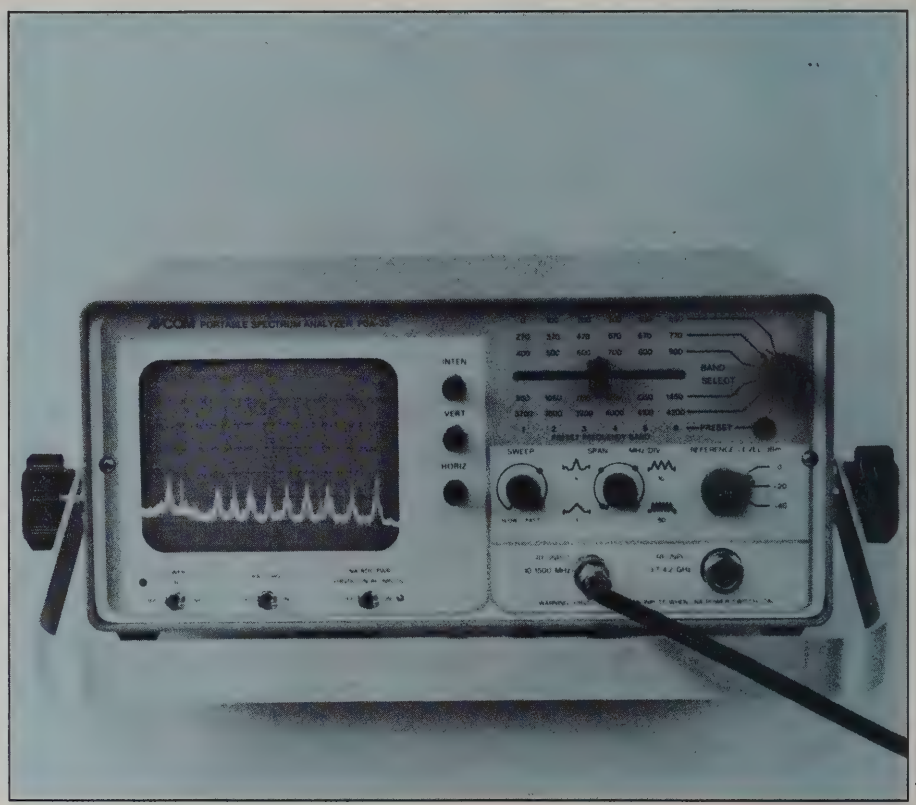
Installation and on-site troubleshooting are made easier with this portable and highly versatile field test unit.

BY MARK LONG

THE SPECTRUM ANALYZER IS A TVRO installation and troubleshooting tool without equal. Not only can an installer measure signal performance in dB at each critical juncture within the system, but he can also identify faulty components, check cable signal losses, and even detect the presence and intensity of terrestrial interference while conducting a site survey. Until recently, however, spectrum analyzers were restricted to the test benches of electronics engineers. Analyzers created for microwave circuit designers were too cumbersome and expensive to use in the field. Because these analyzers are frequently used as calibration standards, engineers are often leery of moving their Hewlett-Packard or Tektronix analyzers from one spot on the test bench to another, let alone sending them out on the road.

Recognizing that TVRO technicians could streamline installation and troubleshooting with more sophisticated field test equipment, Avcom has developed the first portable spectrum analyzer for the private earth station industry. Avcom, one of the first U.S. manufacturers of home satellite TV receivers and accessories, is well known as a developer of products for a wide range of highly specialized TVRO applications. The PSA-35 spectrum analyzer is the result of a quest by Andrew Hatfield, president of Avcom, for the ultimate tool for the TVRO installer. Weighing less than 20 pounds, the PSA-35 is small enough to be taken just about anywhere.

The PSA-35 has been designed to withstand the extra wear and tear inevitably experienced by any field instrument. It has a heavy-gauge aluminum chassis with a cover painted with durable epoxy. A carrying handle and AC line cord storage bracket make it easy to cart the analyzer away at a moment's notice. The cord storage bracket also serves double duty as a support stand for the analyzer, which allows the unit to be stood upright so the display can be easily viewed from above (the brightness of the display can be adjusted for shady or sunny areas). A friction knob assembly is also included for locking the handle into various positions as a support bracket for the main unit. This provides further flexibility for orienting the display at the most convenient angle for viewing.



Avcom

The PSA-35 measures signal loss, locates faulty components, and detects TI.

The Avcom spectrum analyzer can be powered either from a 115-volt source or by means of an internal rechargable battery that can power the unit for up to three continuous hours in the field. The PSA-35's built-in charging circuit can completely recharge the battery to approximately 80 percent of its total capacity in six hours.

The PSA-35 also has an internal DC supply for directly powering most LNAs and block downconverters. When the LNA/BCD power switch is activated, 18 volts are sent up the line via the N and BNC connectors on the front panel. Plug-in PC boards are used throughout the interior of the PSA-35 to facilitate servicing.

The vertical axis of the spectrum analyzer's viewing screen displays the amplitude of an incoming signal; the horizontal axis is referenced to the signal's frequency. A sliding fre-

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quency selector control can be adjusted by the operator so that any group of frequencies within the passband of the analyzer can be observed.

The analyzer's span control is similar to the magnification control on a telescope or microscope. The operator can use it to expand the analyzer's viewing "window" to a panoramic display of the entire 500 MHz-wide satellite band, or to take a close-up view of narrow frequency segments within a single 36 MHz transponder.

Displays RF and IF

The unit's band-select switch allows the analyzer to directly display the signal output of a 4-GHz LNA or the intermediate frequency (IF) output of the downconverter. Both single-conversion 70- or 134-MHz IF signals can be displayed, allowing the operator to view the total downconverter output of a single transponder. The entire 500-MHz output bandwidth of a block downconverter can also be observed by selecting the analyzer's appropriate frequency passband. In addition, the PSA-35 will display the block-frequency output of 12-GHz LNBs so that Ku-band systems can also be tested with the analyzer.

The operator has a choice of three reference levels.

The operator has a choice of three distinct reference levels. The top line of the display can be set either to 0, −20, or −40 dBm (decibels referenced to 1/1,000 of a watt of power). The appropriate reference level depends on the type of signal being analyzed. A typical 4-GHz feedline signal may be as low as −70 dBm, while the output of a typical block downconverter could be −40 dBm.

The analyzer's sweep control sets the rate at which the trace moves across the display. For the purpose of making accurate signal measurements, the sweep rate should be lowered until the signal in question reaches maximum amplitude.

The Avcom PSA-35 spectrum analyzer will provide invaluable test results for technicians conducting site surveys, installing new systems, or troubleshooting terminals that are on the blink. An auxiliary feedhorn that Avcom calls the TISH (terrestrial interference survey horn) can be used in conjunction with an LNA and the PSA-35 so that sales and technical personnel can check potential earth station sites for the presence of terrestrial interference (TI). The TISH feed and LNA are bolted together and the output of the LNA is connected to the N connector input of the analyzer by means of a coaxial cable. The TISH should be pointed directly toward the southern horizon and then moved eastward or westward in 20-degree increments until a sweep through the entire 360 degrees of azimuth has been completed. TI will appear as signal "spikes" that poke their way up from the illuminated trace line that displays the noise floor on the analyzer's cathode ray tube (CRT). If one complete pass reveals no interference, the installer should rotate the feed 90 degrees and sweep again. This enables the installer to detect the presence of TI cross-polarized to the initial feed orientation.

Evaluating TI

If TI is detected, the TISH and PSA-35 can be used to determine both the amplitude and the direction of the incoming interference. Alternative sites in the area can then be checked and subsequent measurements compared to results obtained at the initial site. Often, alternative locations can be found with buildings or other obstructions located between the interference source and the dish, thereby blocking out a significant portion of the incoming interference.

The PSA-35/TISH combination can also be used to directly measure the signal strength of each satellite at the site location. The TISH feed can be oriented to the correct elevation and azimuth angles for each individual satellite. By measuring the levels obtained from each of the birds and comparing the results to those obtained at sites in the clear, a technician can determine if nearby obstructions are attenuating any of the incoming signals. After a while, the site surveyor will learn to recognize the unique signal patterns for each satellite and be able to quickly and easily complete a full survey in a matter of a few minutes.

Installers equipped with the PSA-35 will no longer have to drag an AC extension cord, a TV set, and a satellite receiver out to the dish in order to get the antenna to track properly. The spectrum analyzer will display the amplitude of each satellite's contingent of TV signals, providing the installer with a visual indication of the antenna's performance in tracking any satellite within the geostationary arc. The PSA-35 is also useful for properly orienting the feedhorn for maximum signal capture.

Measure Cable Loss

Technicians can also use the Avcom analyzer to actually measure cable loss over significant distances. Once the technician has determined the amount of loss, line amplifiers with the appropriate amount of signal gain can be added to the system to compensate for the amount of attenuation experienced. The level of gain balance across the full bandwidth of a block downconverter is also evident when the satellite's set of like-polarized transponders is displayed across the PSA-35's screen.

SASAR data can make servicing more scientific.

Avcom has made a valuable contribution to the installation process by creating a document known as the SASAR, or Spectrum Analyzer System Analysis Report. The PSA-35 spectrum analyzer allows a technician to make precise measurements at critical points within a satellite TV system during the installation process. The data obtained is then logged into the SASAR form. If maintenance is required at a later date, the service technician has a record of system performance that will help him compare present and past performance levels. Access to SASAR data can change TVRO servicing from a hit-or-miss proposition to a more scientific process that allows the technician to quickly and easily check the outputs of LNAs, downconverters, RF modulators, signal splitters, line amplifiers, coaxial relays, power dividers, iso-

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lators, and other multiple-installation accessories. The effectiveness of notch and bandpass filters for removing TI can also be readily determined.

Special Applications

Those of us with more specialized measurement needs will also find the Avcom spectrum analyzer to be extremely valuable. For example, the PSA-35 can be used to follow the progress of Intelsat satellites that are being maneuvered from one location to another by zeroing in on their telemetry beacons. New satellites can also be pinpointed in this manner before they begin transmitting TV signals. It can also be used to accurately determine the EIRP levels of satellites at exotic locations far removed from each spacecraft's primary coverage area. This allows a TVRO installer to precisely calculate the combination of antenna size, LNA noise temperature, and receiver CN/R threshold necessary for adequate system performance for the specific site locale in question. Those interested in various kinds of nonvideo (SCPC, FDM/FM, TDMA, etc.) signals can also use the analyzer to identify the nature of voice and data transmissions available within their regions.

The operations manual for the Avcom PSA-35 is well thought out, providing information on various aspects of using the equipment. Included in the manual are several preliminary exercises that will easily and painlessly introduce the art of spectral analysis to dealers with little or no previous experience with similar test gear. Also included is a sample SASAR report that operators can copy and use to compile records of their installations in the field.

What It Can't Do

Now that we have mentioned many of the things that the Avcom PSA-35 can do, it's only fair that we also take a look at the differences between it and the more expensive test bench units used for electronic design purposes. The PSA does not provide a calibrated digital frequency readout of the signal under view, nor does it have sample-and-hold capabilities like some of the newer digital analyzers now available. There is no hard-copy printout of data results, nor is the screen large enough or the resolution tight enough to permit extremely fine measurements of signal levels.

The PSA-35 is the most powerful troubleshooting tool that we have ever had the pleasure of using. Satellite TV dealers with a large base of satellite systems to service will find that the Avcom analyzer will start saving them money immediately. Installers also will find it can significantly speed up the antenna-alignment process. Satellite professionals of every sort will no doubt find a variety of other applications for the PSA-35 that will immeasurably aid their efforts. Investing in this product should be worthwhile. □

Mark Long is author of the 1985 World Satellite Almanac *and* The World of Satellite Television.

PRODUCT: The PSA-35 Portable Spectrum Analyzer
COMPANY: Avcom of Virginia
500 South Lake Blvd.
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(804) 794-2500
CONTACT: Andrew Hatfield
AVAILABLE: From authorized distributors or factory direct
SUGGESTED RETAIL PRICE: $1,965

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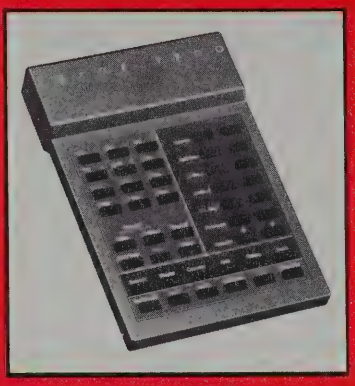

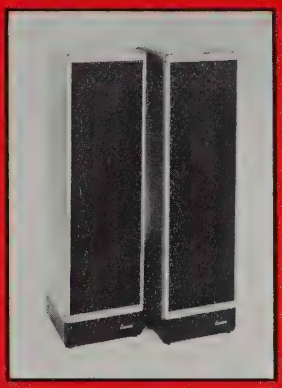

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Luxor 9995
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NEWS

Senator Albert Gore Jr. (D-Tennessee) and Senator Thad Cochran (R-Mississippi) have introduced new legislation in the Senate that would guarantee home satellite

Gore seeks viewers' rights.

earth station owners access to scrambled signals at negotiated, reasonable prices. Gore, a longtime supporter of the home satellite TV industry, said his bill, S. 1618, is necessary to ensure that the diversity of satellite-transmitted signals continues to be available to TVRO owners once programmers begin scrambling their signals. Taylor Howard, chairman of SPACE, said, "This legislation is vital to all existing and future home satellite earth station viewers. We are very pleased that Senator Gore and Senator Cochran recognize the public benefits of satellite earth station technology, and have taken steps to ensure the continued availability of satellite programming to the American consumer."

HBO and Cinemax will be scrambled full time on January 15, company officials have announced. Joe Collins, HBO president, said the move to 24-hour-a-day scrambling was prompted by the "outstanding performance" of the M/A-Com VideoCipher II scrambling system in field tests, as well as M/A-Com's ability to make consumer descramblers available to owners of individual earth stations. "Last May, we announced that full-time scrambling would commence when home TVRO owners had an opportunity to obtain consumer descramblers," Collins said. "M/A-Com is now confident that it will be able to produce and distribute a sufficient number of these units by January 15." Reportedly, "a sufficient number" in HBO's opinion is 25,000. The descramblers will be distributed through TVRO distributors, dealers, and cable operators with a suggested retail price of $395. HBO will also charge TVRO customers a monthly subscription fee of $12.95 for its service.

99th Congress 1st Session S.1618

To amend the Communications Act of 1934 to clarify policies regarding the right to view satellite-transmitted television programming, and for other purposes.

IN THE SENATE OF THE UNITED STATES

September 10 (legislative day, September 9), 1985

Mr. Gore (for himself and Mr. Cochran) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation.

A BILL

To amend the Communications Act of 1934 to clarify policies regarding the right to view satellite-transmitted television programming, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. This Act may be cited as the "Satellite Television Viewing Rights Act of 1985."

SEC. 2. The Communications Act of 1934 is amended by adding at the end thereof the following new title:

"TITLE VII—SATELLITE TELEVISION VIEWING RIGHTS POLICY

"SEC. 701. The Congress hereby declares that it is the policy of the United States—

"(1) to foster the more widespread availability of satellite television programming;

"(2) to ensure a right of rapid availability at reasonable prices to the American public of any such programming that is encrypted;

"(3) to encourage competition among manufacturers and distributors of equipment designed to facilitate the reception of encrypted and unencrypted satellite television programming; and

"(4) to provide a method for establishing reasonable prices, terms, and conditions for viewing rights to such television programming where marketplace forces to do so are inadequate.

"ENCRYPTED SATELLITE CABLE PROGRAMMING

"SEC. 702 (a) Any person who receives encrypted satellite cable programming may receive such programming decoded for private viewing upon compliance with prices, terms, and conditions established in the marketplace or by the Commission, which are not inconsistent with policies and provisions of this title.

"(b) No person shall engage in any practice regarding such programming which—

"(1) has the effect of denying the availability of such programming for private viewing, to consumers or to bona fide distributors of such programming, or,

"(2) by charging such prices or imposing such terms or conditions for private viewing of such programming has the effect of substantially restricting its availability or discriminates in price between different distributors offering comparable distribution services.

"(c) No person shall engage in any practice whereby, as a condition of any person's right to receive such programming for private viewing, any such person's right to receive such programming for private viewing, any such person would be required to purchase or lease from specified sources equipment designed to decode encrypted satellite cable programming.

"COMMISSION RATES AND TERMS FOR SATELLITE CABLE PROGRAMMING

"SEC. 703. (a) In addition to any remedies at law under this title, in the case of any person seeking private viewing rights to encrypted satellite cable programming—

"(1) who has requested private viewing rights to such programming and has been denied such rights for a period of at least ten days, or where the terms or conditions of obtaining such rights have the effect of substantially restricting its availability; or

"(2) who resides in the franchised area of any cable television system and where the cable television operator (or an affiliate) is the sole source of supply of such viewing rights to such person; or

"(3) who resides outside the local franchised area of any cable television system, and where the price for such viewing rights is higher, on average, than paid by cable television system subscribers in the 'market,' the Commission shall, on the petition of such person, establish reasonable prices, terms, and conditions for such viewing rights, which shall be binding in such 'market.'

(b) In establishing such prices the Commission shall consider primarily the following factors:

"(1) the cost of such programming to the persons distributing it for private viewing and the reasonableness thereof, principally in light of the cost of obtaining rights to distribute such programming to other viewers;

"(2) the additional cost of distributing such programming to the petitioner or class represented by the petitioner, and the reasonableness of such cost;

"(3) the cost of equipment for reception of such programming to the class of which petitioner is a member, and the reasonableness of such cost; and

"(4) the prices paid for such viewing rights by others in the market.

"REGULATIONS

"SEC. 704. The Commission may prescribe and make effective any rules and regulations necessary to implement its enforcement of this title including defining 'market' consistently with the purposes of this title. In any event, any petition filed shall be finally determined by the Commission within sixty days after such filing.

"CIVIL ACTION AND PENALTIES

"SEC. 705. The remedial and penal provisions of section 705(d)(2) and (3) of the Communications Act of 1934, as amended, shall apply to this title.

"DEFINITIONS

"SEC. 707. For the purposes of this title—

"(1) the term 'satellite cable programming' means programming transmitted via a domestic geostationary communications satellite intended for reception by cable television system subscribers or by the audience of broadcast stations licensed by the Commission; and."

SEC 3. Sec. 2(b) of the Communications ACt of 1934 is amended by inserting after "of section 301" the following: "and title VII."

SEC. 4. This Act and the amendments made by the Act shall take effect on the date of the enactment of this Act.

The U.S. Justice Department is ormally investigating plans by rogrammers and cable operators o market scrambled signals to ome earth station owners. Justice)epartment spokesman Mark heehan said the probe is focusing n possibly illegal group efforts by able operators and programmers o control the sale of both program- ning and decoders. Sheehan said he department also is taking a lose look at joint ventures among rogrammers to serve the home 'VRO market.

CBS selected M/A-Com's Video- Cipher I—not II—television crambling system for its satellite ignal and planned at press time to ave all network satellite transmis- ions scrambled by mid-October. CBS reportedly selected the Video- Cipher I system after a year of esting. Use of the VideoCipher I echnology effectively cuts off ome satellite TV viewers, and CBS has no plans to change that act in the immediate future. SPACE officials plan to meet with CBS executives to encourage them o change their policy so rural TVRO owners who are out of range f local stations can receive the CBS signal.

The Arts & Entertainment Net- work is the latest network to nnounce it will charge TVRO wners a fee for receiving its sig- al. Nickolas Davatzes, president nd CEO of the network, said the

A&E says it will charge fees.

$19.95 annual fee, which became effective October 1, will be charged until A&E scrambles its signal. Although no scrambling date has been set, Davatzes said, "As A&E's subscriber count and affiliate rela- tions continue to develop, A&E intends to follow the cable indus- try's recommendations for scrambling."

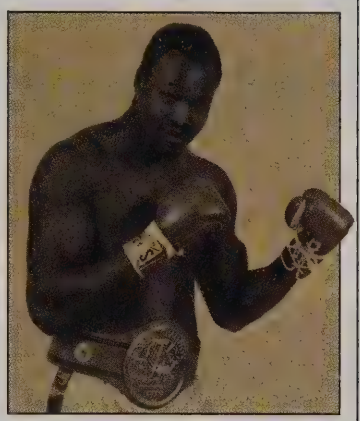
A programmers' consortium including the Turner Broadcasting System, Showtime/The Movie Channel, MTV Networks, and ESPN is moving ahead with plans to incorporate. The consortium plans to offer its signals to home TVRO owners through local cable companies. It intends to use the M/A-Com VideoCipher II technology to scramble its signals by July 1986.

Lowrance Electronics has announced it will no longer manu- facture home satellite TV equip- ment. The Tulsa, Oklahoma, manufacturer said in a press release, "We are diminishing our satellite operations and research and development to pursue other electronics opportunities until a clearer picture of the satellite mar- ket can be obtained. Lowrance will continue to fulfill contractual arrangements with customers pur- chasing receivers in South America and Western Europe, and will also continue to supply the needs of its active U.S. distributors." The release said Lowrance will honor warranties on all equipment. For- mer satellite equipment engineers at Lowrance have formed a new company, Avtronix, to design and market new satellite products, the release said.

Telesat Canada has filed for CRTC approval of a tariff for a new audio program transmission ser- vice to be known as Anikast RadioNet 1. The service will allow radio network operators to have their program services uplinked from Telesat-owned radioports in major Canadian cities and re- transmitted to affiliate stations elsewhere in Canada. Single chan- nel-per-carrier technology will be used to keep Anikast RadioNet 1 completely independent of other services transmitted from the same sites.

Private Satellite Network has agreed to use Scientific-Atlanta's new B-MAC transmission format technology. Scientific-Atlanta says the new technology represents the first fundamental change in color television in the United States since color was introduced 28 years ago. The new system offers improvements over traditional color television, including one-way broadcast data, Dolby stereo audio, wide-screen projection, videotext, secure scrambling, and improved picture quality. Merrill Lynch and MicroAge will be the first PSN cli- ents to use the B-MAC system this fall. PSN is a national business tele- vision communications service. The firm designs, installs, operates, and maintains point-to-multipoint video networking services using DBS technology.

The Pay-Per-View Channel (PPV) is considering legal action after a contract it had to televise the September 21 Larry Holmes vs. Michael Spinks heavyweight title fight to home TVRO owners was cancelled 11 days before the event. PPV had contracted with J&J Sports Productions of San Jose, Cal- ifornia, for home TVRO and closed-circuit rights to the fight. J&J had arranged with fight pro-



Holmes' defeat wasn't on PPV.

moters Don King and Butch Lewis to handle marketing of a secondary uplink of the fight for closed-circuit and foreign distribution. Home Box Office owned the rights to the pri- mary signal and was offering the telecast to its cable subscribers. PPV was offering the feed for $15 to TVRO owners with Orion decoders. HBO stepped in, how- ever, and forced J&J to cancel its contract with PPV for the TVRO rights. The closed-circuit rights apparently weren't affected. Brian Bernstein, general manager of J&J, said, "It was within HBO's rights to terminate the agreement [with PPV]. It was part of the written agreement HBO had with the pro- moters." Chuck Dawson, presi- dent of PPV, said his contract with J&J should have been honored and blames HBO for applying "tremen-

Dawson blames HBO's pressure.

dous pressure" on J&J to break the agreement. "We maintain that the promoter didn't have the capability to do this," Dawson said. "[Don King's] attorney and our attorney were in screaming contests over that. I would like to avoid court action if it's possible. We hope we can work something out."

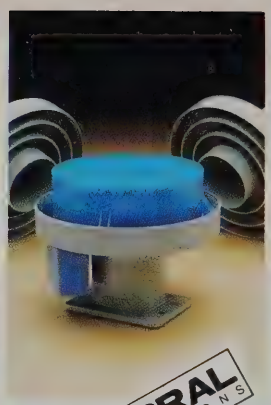
The Satellite Owners Associa- tion has been formed by a group of Baker, Oregon, residents to give TVRO owners a voice in the indus- try. The group, founded by Mike and Jan Phillips and William and Connie Marlow, claims to have signed up more than 2,500 mem- bers. Mike Phillips said, "This organization is for the absolute benefit of TVRO owners. Without the owners, there is no industry. Big business seems to have forgot- ten that." He said the group hopes to eventually have 500,000 mem- bers. Phillips said the group plans to fight scrambling plans by net- works and establish a toll-free telephone number that members can call when they have a TVRO- related problem. The group also plans to publish a newsletter. For more information contact the Satel- lite Owners Association, P.O. Box 190, Baker, OR 97814.

The Fantasy Unrestricted Net- work (a.k.a. The FUN Channel) has introduced a new decoder. Robert Steinman, president of the network, said, "The second-gener- ation decoder will provide more flexibility to the consumer in a smaller-sized container. Besides having the traditional audio and video ins and outs, the new

FUN has a new decoder available.

decoder has a built-in channel 3 or 4 modulator, and also has address- ing capability."

Echosphere and Westinghouse Credit Corporation (WCC) have developed a floor planning pro- gram for Echosphere dealers. The Westinghouse program will allow qualified dealers to floor plan con- siderable amounts of equipment. Echosphere will pay the first 30 days' interest on any order pur- chased through WCC financing. All orders must be for $5,000 or more. All decisions on dealers' eligibility for the program will be made by Westinghouse. Dealers desiring more information should request WCC floor planning applications from their nearest Echosphere dis- tribution center.



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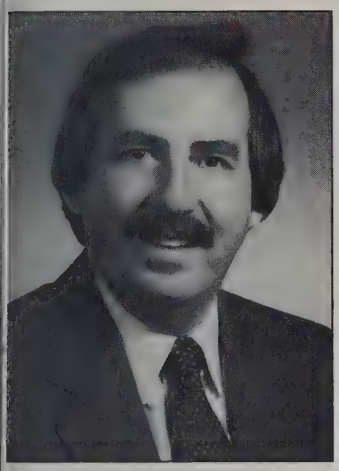
SIGNALS

A new consumer financing program is being offered by Birdview Satellite Communications. The program allows customers to purchase some satellite TV systems through an exclusive credit card plan. Customers can have up to 53 months to pay under a revolving program serviced by the General Electric Credit Corporation (GECC). Edward Gibson, senior vice president and general manager of



Gibson touts finance program

marketing for Birdview, said the program offers several advantages to dealers, including immediate financing of purchases, prompt credit application approval, and minimal paperwork. GECC will handle monthly billing.

Kenwood has begun marketing and distributing its satellite receiver systems directly through Kenwood dealers. Dan Petersen, vice president of sales and marketing, said Kenwood has always favored dealer-direct distribution. "Selling directly to the dealer is a philosophy that has worked successfully for us for 25 years," Petersen said. "It helps build dealer loyalty and the consumer benefits accordingly. Selling directly to the dealer enables us to provide the education and training necessary for a product like a satellite receiver." Petersen said Kenwood dealers are being selected according to their experience and installation expertise.

Hero Communications has announced a new marketing program. The program, called Hero Vision, is designed to increase penetration of the consumer satellite TV market. Sales of total system packages will be the cornerstone of the new concept. Robert Behar, president of Hero, said the company has significantly reduced prices for both distributors and dealers in order to make its antenna line more competitive in the consumer marketplace. Hero is also qualifying distributors by requiring product purchase in lots of 100. The marketing effort also includes an attempt to improve the equipment's aesthetics.

The National Rural Utilities Cooperative Telecommunications Corporation (CTC) has been formed to provide assistance and information to rural electric membership corporations (RECs) and rural telephone cooperatives (RTCs) on satellite and cable television ventures. (See "Clashing With Co-Ops," page 38.) CTC's goals include evaluating equipment to determine the best systems for different geographical regions, training installation crews, coordinating a volume buying service, and providing consulting services. CTC is headquartered in Indianapolis, Indiana.

M/A-Com has announced that Telecommunications Inc. (TCI), the nation's largest operator of cable television systems, has placed a multimillion dollar order for VideoCipher II commercial descramblers. TCI will use the descrambling units to equip its headends with the hardware necessary to receive the encrypted signals of the basic cable services. J.C. Sparkman, executive vice president of TCI, says, "We do not feel that the entire financial burden of scrambling should fall on the program suppliers. Therefore, we are stepping up and making the commitment to purchase the headend descrambling hardware needed to receive the encrypted programming of the basic cable services. We hope that our commitment to purchase headend descrambling hardware will encourage basic cable programmers to move forward with their announced intentions of scrambling as soon as possible, joining with the premium programmers that have already committed to the M/A-Com VideoCipher scrambling system.

"Timing and the need for an industry standard were the critical factors in our decision making," Sparkman says. "After extensive evaluation we concluded that M/A-Com can move faster than any other potential scrambling system supplier in having a full system up and operating. We are also convinced that the M/A-Com system is best-suited technically to meet the scrambling needs of cable."

Scientific-Atlanta has established a dealer support system for authorized dealers of its Homesat product line. The system, called "The Strongest Link," will provide dealers with a sales kit that includes a dealer notebook outlining sales policies and procedures, brochures, posters, a counter-top literature display rack, authorized dealer window decal, and a variety of premium items. Dealers will also become eligible for participation in a co-op advertising program. They will receive a co-op advertising kit containing all necessary ad tools. Authorized dealers will be required to attend regularly scheduled training classes held for free at regional training centers. A bimonthly newsletter will provide information updates, sales tips, and new product announcements.

Eight new members have been elected to the SPACE dealer board of directors, bringing total board membership to 24. Elected by fellow SPACE dealer members were: John Breckenridge, Satellite Downlink TV Systems; Leon Fancher, Morning Star Communications; Dennis Fite, Skysweeper Satellite Systems; Richard Lowman, Berkeley-Sunwood; Gordon Main, Main Electronics; Billie Smith, Bull's Eye Satellite Systems; Lee Wendelbo, Rainbird Satellite Systems; and Frank Wilke, INVECOM. They join existing dealer board members Hoyt Foster, Jerry Fischette, Mary Lou Heinz, Wayne Morong, Dan Weggeland, King Oberlin, Charlie Brown, Jerry McCann, Thomas Duflo, Ed Reynolds, Frank Abruzzo, Joseph Iozzi, Scott Poole, Tom Tomasi, Tom Harrington, and Anna Visalli.

The newly elected manufacturer board members are: Bob Behar, Hero Communications; John Schweizer, Winegard; David Chance, Scientific-Atlanta; Randall Odom, Odom Antennas; John Kaul, KaulTronics; Hans Giner, Luxor; Guy Davis, PenTec; Sam Singer, Gensat; Hiro Sugiyama, DX Communications; Phil Cox, M/A-Com; Robert Hooper, Raydx; and Steve Crum, Regency.

The new distributor board members are: Ronald Bruce, National Satellite Communications; William Webster, Finger Lake Communications; Sam Gasque, Skyhigh Satellite Distribution; Brad Von Holten, Horizon Satellite Distribution; and Mike Talbert, Flame Satellite Products. Also elected were private cable board members Peter Sutro, MPI Satellite, and Russell Keene, Space Crafts.

The main board officers will continue to serve at their present positions. They are: Taylor Howard, Chaparral, chairman; Charles "Bud" Ross, Birdview, president; Charles C. Hewitt, executive vice president; David Johnson, Paradigm, treasurer; Ted Anderson, secretary; and Richard Brown, legal counsel.

The SPACE board of directors reaffirmed the organization's goals at its meeting at the Nashville trade show. The goals include:

- The satellite earth station consumer should have a right of access to all scrambled signals.
- Programmers generally should be paid for their efforts, either through advertising, subscription, pay-per-view, or some yet-to-be-conceived payment plan.
- The satellite earth station consumer should pay reasonable prices. This must come about either through a competitive, free enterprise distribution system not controlled exclusively by programmers or cable operators, or by legislation including regulation. SPACE supports a level playing field in the area of distribution of scrambled signals to satellite earth station owners both inside and outside of cabled areas. That is, we oppose any distribution scheme that would have the effect of excluding independent, non-cable or non-programmer (distributors), and we oppose exclusive distribution plans through the cable industry or programmer cooperatives.
- SPACE supports the entrepreneurial spirit of all advertiser-supported services that wish to serve the rapidly expanding earth station market in an unscrambled mode in order to maximize their viewing audiences. We encourage these services to use their common sense and not succumb to the anti-competitive posture of the cable industry advocates who are attempting to force them to scramble by threatening to drop their services. In summary, they should have freedom of choice.
- Scrambling equipment should be low-cost, user friendly, and widely available. This includes: chip sets and associated electronics should be available to all satellite earth station receiver manufacturers; sufficient decoders should be available before encryption commences; and encryption should be a flow-through encryption system that will allow the viewing screen to be addressed, decoded, and billed. This includes every cable, MDS, and STV subscriber. Anything short of that is an interim technology and the consumer should not be forced to pay for such an experiment.

SIGNALS

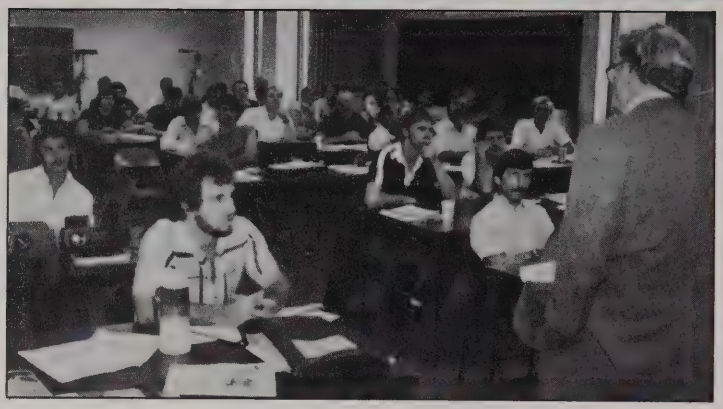
Satellite Reception Services (SRS) is supplying five major retailers in the Ohio Valley and Great Lakes regions with home satellite TV equipment. The retailers include Sun TV with seven stores, Higbee's with eight stores, Shillito Rikes of the Federated group with 15 stores, Home Center with 16 stores, and Highland stores in Michigan with 33 outlets. Bob Virden, vice president of merchandising for SRS, says, "These stores have committed to substantial orders. They're interested in full system lines and we're selling them Winegard, M/A-Com, Janeil, and Amplica. SRS will provide the retailers with product warehousing and delivery, store display installations, sales training, marketing support, and an installer base called the Satellite Service Group. Walter Everett, SRS chief executive officer, says, "The Satellite Service Group is comprised of experienced TVRO dealers. They will earn a lot of long-term extra profits installing and servicing the equipment these department stores sell."

Amway and Automation Techniques have reached an agreement in which Auto Tech will supply receivers for Amway's satellite systems. Amway, a direct distributor of home and personal care products, recently began offering what it hopes is a consumer-installable satellite system.

Raydx Satellite Systems' new electronics manufacturing plant is now operating. Production in the 8,200-square-foot facility began in August and is being steadily increased to 10,000 receivers per month.

A new book—*The Home Satellite TV Installation and Troubleshooting Manual*—debuted at the Nashville show. Written and published by Brent Gale and Frank Baylin, the book contains more than 300 illustrations, photos, and tables and is written for both satellite TV dealers and do-it-yourselfers. The text includes necessary background theory and details on how satellite television operates. It also offers methods on how to select and evaluate components, and has a detailed step-by-step installation guide. Other features include explanations of multiple-receiver and multiple-television hookups and troubleshooting. For more information contact Baylin/Gale Productions, 1905 Mariposa, Suite G, Boulder, CO 80302.

The Professional Electronics Technicians Association's second Indiana TVRO school attracted 119 students. Of the 57 attendees who later took Indiana's TVRO license examination, 81 percent passed. Students attending the school received training in TVRO technology, off-air UHF/VHF antennas, and MATV systems. The next school will be held November 21–23 at the North Meridian Inn, 1530 N. Meridian, in downtown Indianapolis. For more information or to pre-register, contact ETA at (317) 653-3849 or (317) 653-5541.



The ETA's second TVRO school in Indiana drew a full class.

Millimeter Wave Technology has moved to a larger headquarters in Marietta, Georgia. The move to the 17,000-square-foot facility was made to accommodate the firm's new Satstar division, which handles consumer satellite television equipment. Satstar, born in early 1985, recently received the first shipment of its initial product entry, the Elan synthesized satellite receiver. The address for the new headquarters is Building 700, 1395 Marietta Parkway, Marietta, GA 30067, (404) 425-9382.

Earth Station Products (ESP) has changed its address. The firm is now located at 3341 Holwyn Drive, Unit 2, Lexington, KY 40503, (606) 223-8372.

SJR Electronics is now located at 17686-57th Ave., Cloverdale, British Columbia, Canada V3S 1H2. For sales and service contact Theresa Ferguson at (604) 576-1210.

GTE Spacenet has signed a contract with HI-NET Communications to provide satellite capacity on its GSTAR 1 Ku-band satellite. HI-NET will use the satellite capacity in a network carrying news and entertainment programming and videoconferencing services to hotels throughout the United States. The seven-year agreement calls for HI-NET to use three transponders initially and contains options for additional transponder capacity and extended years of service. HI-NET will broadcast Showtime/The Movie Channel, CNN, ESPN, and its own Satellite Cinema on GSTAR 1.

RCA Americom has announced that all 16 transponders have been leased on its Satcom K-2 satellite, scheduled for launch on November 27. The bird was filled when AT&T Communications agreed to lease two of the 45-watt transponders. Eight of the transponders are to be used by NBC Television for distribution of programming to affiliates. Conus Communications is leasing four transponders for distribution of its news network and Washington Direct programming. The other two transponders will be used by RCA Americom for its Syndication System program distribution via the earth stations and receivers it is offering to all standard-power commercial broadcast television stations in the United States. More than 440 stations have agreed to take the antenna/receiver package.

DX Communications has unveiled a new co-op advertising program for its dealers. Dick Gonzalez, vice president of marketing for DX, explained that dealers will accrue per-unit advertising allowances on DX products they purchase from authorized distributors. Dealers must obtain prior approval of their specific advertising programs and costs from a DX distributor and DX regional manager. DX will pay 100 percent of the dealer's actual advertising costs and will make ad slicks available for dealers to run in their local newspapers. The accrual period will include purchases made through December 31, 1985, for use in local advertising to appear by February 28, 1986.

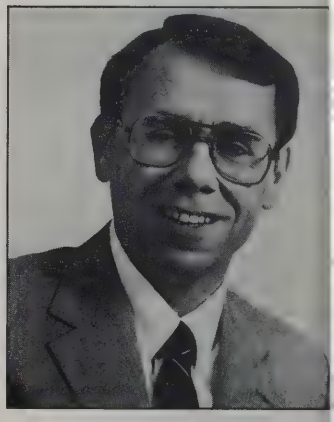
The Oklahoma Teleport is now operating in Oklahoma City. The teleport, which is owned by Ethereum Scientific Corporation of Houston, Texas, will provide video, voice, and data communications links for companies, educational institutions, and government agencies in the southwestern United States. Access to the teleport is available through terrestrial microwave, fiber optic network, and dedicated telephone lines.

Satellite Video Services is now offering a financing program for dealers. The program is offered in conjunction with Security Pacific Finance Corporation. For more information, dealers may contact SVS at (518) 678-9581.

PEOPLE

Charles A. Zito has been named vice president and general manager of the network products division of ComSat Technology Products. Zito was vice president of marketing and business development for ComSat before being appointed to the new post.

David P. Rivoira has been appointed vice president of new business ventures at NAP Consumer Electronics. Rivoira had been marketing and business development manager for Corning Glass Works' electrical products division.



Rivoira appointed VP at NAP

DX Communications has announced several personnel changes. **Thomas L. Sharpe** has been promoted from eastern regional manager to national sales manager. Succeeding Sharpe as DX's eastern regional manager is **Rolland L. Clark.** Clark was most recently a partner in Navigator Computer Systems in Atlanta, Georgia. Clark has also served as regional sales manager for Mitsubishi Electric, district manager for Yamaha International, and regional salesman for Sony.

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  812/424-5882
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  616/698-9881
  (In Michigan)
  1-800-862-9850
- *Peoria*
  912 West Detweiller Dr.
  Peoria, IL 61615
  309/692-4630
  (In Illinois)
  1-800-367-9531

Circle 41 on the Reader Service Card

Vivian E. Goodier has been appointed vice president, corporate development for Viewers First National. Goodier will be responsible for overseeing the company's organizational development activities. Goodier's background is in the development and operation of satellite program networks. She was executive vice president of Black Entertainment Television from 1979 through 1982. In 1982 she joined The Disney Channel as East Coast regional director. She has also worked as vice president of U.S. cable sales and relations for the NABU Network as well as director of congressional affairs for the National Cable Television Association (NCTA). She was a communications consultant before joining Viewers First.

Edwin Grainger has been appointed midwestern regional manager at DX. Grainger will assist DX distributors with marketing, promotion, and development of dealer networks in a 15-state region. Grainger has previously been affiliated with Western Union, General Instrument, and Ericsson Information Systems.

C. Jacob Kreiger has become manager of service and quality control. He will take on management responsibilities for servicing all commercial and home DX products. Kreiger has several years of experience in the technical service, installation design, and engineering of satellite TV equipment.

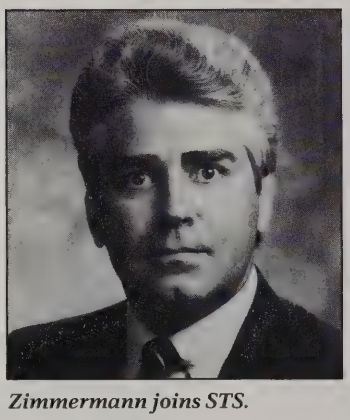
Irv Cook has been named vice president of marketing, U.S. operations, at Tee-Comm Electronics, a Canadian manufacturer of antenna systems. Cook formerly was director of sales and marketing for Raydx Satellite Systems.

Mike Mikinski has joined the engineering staff at Earth Station Products (ESP). Mikinski has bachelor's and master's degrees in electrical engineering from the University of Kansas. He was working on his doctorate in microwave technology at the University of Michigan before joining ESP.

Russ Maple has joined Sea Breeze Antenna Technology as national sales manager. Maple, a veteran of 20 years in sales management, will supervise Sea Breeze's regional sales team. He will also supervise the company's dealer-direct distribution centers.

Nancy A. Turpin-Sherwood has been appointed vice president of operations for Odom Antennas. In addition, she was appointed to Odom's board of directors. Turpin-Sherwood joined Odom in 1984 as director of public relations/advertising. In her new position, Turpin-Sherwood will direct the daily operations of Odom's administrative staff and coordinate various aspects of the company's departments and divisions. She will also maintain her regular duties in industry relations, advertising, and public relations.

Albert J. Zimmermann Jr. has joined Satellite Technology Services (STS) as vice president of marketing. Zimmermann will support STS' marketing, sales, and advertising programs in the home satellite receiver system, aviation, and marine electronics businesses in his new position with the company. An employee of Automatic Data Processing (ADP) for the past two years, Zimmermann was the corporation's director of advertising and sales promotion. Prior to working for ADP, Zimmermann spent 14 years with the Panasonic Company in a number of management positions, the last as advertising manager of the Panasonic Industrial Company of Secaucus, New Jersey. Zimmermann's career also includes a media buyer position at Grey Advertising in New York.



Zimmermann joins STS.

PROGRAMMING

A Los Angeles-area radio station has started a talk show dedicated exclusively to the TVRO industry. KIEV, 870 AM, was scheduled to debut October 9. Called *The Satellite Report,* the program will initially run 13 weeks on Wednesdays from 11 a.m. to 2 p.m. (PT). "*The Satellite Report* will review and discuss the entertainment choices available through TVRO system ownership, and will educate the listening audience regarding options on available system technology," a KIEV press release stated. The program features guests involved in TVRO programming, manufacturing, retailing, and legislation. A portion of the program is devoted to phone-in discussion with listeners. KIEV is the second-ranked talk-radio station in the greater Los Angeles, Orange County, and San Fernando Valley markets. *The Satellite Report* will be available to more than 7 million listeners.

Sewing by Satellite '85 will be telecast November 2 to more than 40 receive sites in the United States and Canada. The five-hour program will feature experts conducting seminars on various aspects of sewing. The event, which has been held twice previously, is being co-sponsored by the American Home Sewing Association and the Clothing and Textile Specialists of the U.S. Department of Agriculture Cooperative Extension Service. The registration fee for the program is $65.

Home Shopping Network (Satcom 3, tr. 22) has expanded its viewing hours. The network began telecasting on September 1 from 8 a.m. to noon (ET) seven days a week. HSN has completed negotiations for all remaining time on the transponder and soon plans to begin operating 24 hours a day.

TCS has introduced its new video division by offering *Great Moments in Penn State Football,* volumes I, II, and III and *Get Up and Cheer* videotapes in both Beta and VHS formats. *Great Moments in Penn State Football* focuses on the Nittany Lions' top players, plays, and games from 1975 through 1984. The tapes are narrated by former Penn State star Jimmy Cefalo and feature commentary by head coach Joe Paterno. *Get Up and Cheer* is a basic instructional cassette on cheerleading aimed at children ages 8 to 13. Past and present Penn State cheerleaders offer experienced instruction in jumps, partner stunts, pompom routines, dances, and gymnastics.

The Bankers Television Network has been formed to provide information to the banking community. Network officials hope to have 300 small and mid-sized banks receiving the scrambled, Ku-band signal by the end of fall. Bonnie Eidson, president of the network, said seminars, quick-response programs, crisis alerts, and customer programs would be telecast. Banks will pay a monthly subscription fee that includes the installation and maintenance of the 4-foot receiving dishes, which BTN will own. Most programs will originate in BTN's studios in Schaumburg, Illinois, and Private Satellite Network of New York is providing satellite time, networking services, hardware installation, and maintenance.

The Disney Channel will premiere *The Dr. Joyce Brothers Program* this month. Sixteen one-hour specials will focus on family life and communication through upbeat, positive discussions. Celebrity guests will join Brothers in discussing various ways they maintain and enhance their relationships with their families. Among the celebrities featured will be Dick and Pat Van Patten, Vicky Lawrence, Frankie Avalon, Bruce and Linda Jenner, James Darren, Jerry Mathers, and Lynn Redgrave. Brothers will also lead group discussions on issues affecting American families today. Participants will discuss topics such as cooperation, privacy, money, education, dad's increasing role, sports, and in-laws. Viewer call-in segments will also be featured.

THE DISNEY CHANNEL

Disney features Joyce Brothers.

Several of auto racing's premiere events will be televised by TBS Sports beginning in November. TBS sportscasters Ken Squier and Dave Despain will be the broadcast team for the races. The schedule includes: Atlanta Journal 500, November 3; Winston Western 500, November 17; 24 Hours of Daytona, February 1 and 2; Richmond 400, February 23; 12 Hours of Sebring, March 22; Charlotte Grand Prix, May 18.

SCORE, a service of the Financial News Network, is now airing *Time out for Trivia,* a nationwide sports call-in game show. The show airs Monday through Friday from 8 to 8:30 p.m. (ET) prior to SCORE's *Sportswatch.* Todd Donoho, a former NFL play-by-play announcer for NBC and the Sports Time Cable Network, is the host of *Time-out for Trivia.*

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So don't be fooled by look-alikes (and there are many). Insist on the best, the original, the 10.5′, 8.5′, and expandable 6′ Raydx antennas. After all, anyone can copy an original design, but only Raydx can deliver the quality on-time, every time.

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RAYDX SATELLITE SYSTEMS, LTD.

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PATENT PENDING

The Profit Line. From DX.

Introducing the Profit Line from DX Communications. A completely new line of high-quality satellite TV equipment, specifically designed to fit the needs and budgets of every customer.

All DX receivers feature both C and Ku-band compatibility, video clamp/unclamp switch for descrambler compatibility, and block down-conversion for multiple-receiver hookups.

DX also offers matching antenna positioners, a remote sensor, block downconverter, and all of the other accessories needed to create the perfect satellite TV system.

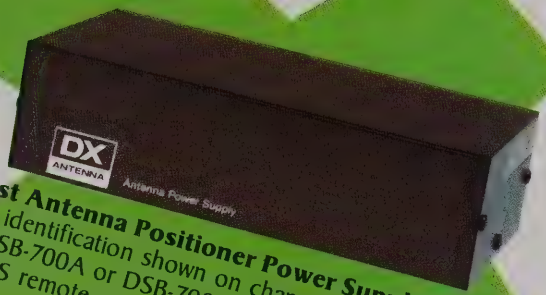
Best of all, whether you choose our most economical or our top-of-the-line equipment, you'll be assured of getting the same superior quality and reliability that DX has become known for in commercial and home satellite systems.

For more information, contact your authorized DX distributor, or mail in the coupon. Find out how the Profit Line from DX can mean higher profits for your store.

NEW Satellite Receiver with Detent Channel Selector, DSB-600A
• Picture quality comparable to commercial receivers • 4 GHz and 12 GHz compatible • Decoder ready • Digital channel readout

NEW Remote-Controlled Satellite Receiver, DSB-700A
• Full-featured infrared remote control • 4 GHz and 12 GHz compatible • Decoder ready • Professional-type signal strength meter

NEW Stereo Remote-Controlled Satellite Receiver, DSB-700S
• Stereo dual-channel audio tuning • Push-button selector for matrix and discrete stereo modes, with LED indicators • 4 GHz and 12 GHz compatible • Decoder ready



NEW East/West Antenna Positioner Power Supply, DSB-300
• Satellite identification shown on channel readout when used with the DSB-700A or DSB-700S • Remotely controlled by the DSB-700A/S remote-control unit

Deluxe Antenna Positioner with Total Remote Control, DSB-400A
• 24-position fully programmable satellite and transponder information • Programmable polarization and skew • 10-year power loss memory retention

NEW Satellite Receiver with Convenient TV-Type Tuner, DSB-500
• Push-button C and Ku-band selector • Comes complete with separate DSB-60 block downconverter • Descrambler ready

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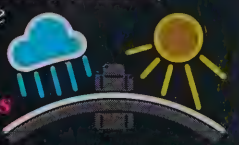
THE ONE.

SPACE VISION 5500 ANTENNA

Alas, Space Vision once again excites the satellite reception industry with a 10.5 foot Aluminum Mesh Antenna that exudes "total engineering". With features that show Space Vision's foresight and leadership to answer every category of performance and reliability. "THE ONE" answers only to you...

To answer handling and cost-efficiency, the Space Vision 5500 Mesh Antenna is ***UPS shippable*** *in two cartons. Space Vision is THE FIRST ONE to present a patented,* ***"pre-assembled" polar mount*** *—*

with sealed, lubricated-for-life polar axis ball bearings for reliable critical point movement. THE FIRST ONE to answer your needs with ***a pre-grooved hub unit*** *and unique overhanging lip design for added strength and* ***quick assembly.*** *Space Vision's ultra-modern extrusion forming machine guarantees constant curve accuracy within the most exacting tolerances. All parts of the 5500 are made of the latest* ***"Space Age" aluminum*** *you've been hearing about, protected by the tested permanence of our own* ***"Weather Guard"*** *coating. Every piece of hardware is first quality* ***stainless steel.***



The 5500's ***"deep dish"*** *configuration affords maximum illumination efficiency and minimum terrestrial interference on standard design feed horns.*

You even get THE FIRST ONE to deliver an innovative ***"Auto Focus" feed pole*** *to insure instant, precise no-fault focal point positioning.*

SPECIFICATIONS:

Diameter	10.5 Ft.
F/D Ratio	.310
Focal Point	38.5"
Feed Type	Prime Focal
Gain	Approx. 40db
Mount	True Polar
Shipping Weight	125 Lbs.
Warranty	Limited 2 Yr.

For features that answer your problems and deliver performance and innovation, call your local Space Vision distributor.

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SPACE VISION

Circle 212 on the Reader Service Card

The Discovery Channel has added *The New Tech Times* to its programming lineup. The award-winning weekly video magazine has been carried by the Public Broadcasting System for the past two years. Each half-hour episode showcases four or five stories that explore the dynamics of the electronic age and how high technology affects our lives.

HI-NET Communications has announced the addition of BizNet, the American Business Network of the U.S. Chamber of Commerce, to the daily schedule of news and entertainment programming broadcast to hotels throughout the United States on HI-NET's satellite television network. *BizNet News,* an hour-long business news and economic features program, will be aired on HI-NET's Satellite Cinema channel weekday mornings at 6, 7, 8, and 10 a.m. (ET). *Ask Washington,* a live, audience-participation talk show, will be aired on the same channel at 9 a.m. (ET) weekdays.

KKGO-FM, a Los Angeles jazz radio station, is now being uplinked by United Video. The station, which broadcasts 24 hours a day, is on Satcom F3R, transponder 4. Its programming ranges from traditional to contemporary jazz and it also features live concerts and jazz festivals. KKGO-FM is the second radio station offered by United Video. WFMT, Chicago Fine Arts SuperRadio, has been broadcast since 1979.

REO Speedwagon will present a one-hour concert in November on Showtime. The rock band's current million-selling album *Wheels Are Turning* has been on the pop album charts for more than 10 months. A single from that album, *I Can't Fight This Feeling,* was at the top of the singles charts for several weeks last summer.

The Learning Channel has added several new programs to its fall schedule. *The Mechanical Universe* is a series that functions as a basic course in physics that viewers can watch to earn credit from participating colleges and universities. The program airs Mondays and Wednesdays at 3 p.m. (ET) and is repeated on Tuesdays and Thursdays at 7:30 a.m. (ET) and Saturdays at 8 a.m (ET). *Effective Listening* is a program designed to help business professionals improve their communication skills. The program is aired Fridays at 8 a.m. (ET) and repeated on Saturdays at 1:30 p.m. (ET). *Inside Your Schools,* a magazine-format program that examines American schools, airs on the first Tuesday of each month at 3 p.m. (ET). It is repeated on the following Tuesday at 2:30 p.m. and the following Sunday at noon. *Ask Washington* is a live call-in show that presents newsmakers from across the nation discussing national issues. The program airs weekdays at 9 a.m.

Cable Sports Network has reached an agreement with the MizLou Television Network to allow CSN to receive MizLou's live sports programming. Among the events provided by MizLou will be weekly horse racing from major tracks around the United States, professional boxing, post-season college football, and college basketball.

WGN will open its 41-game college basketball schedule on November 26 with Loyola vs. Illinois. WGN will feature DePaul University in 16 games, the University of Illinois in 15 games, and Notre Dame's Fighting Irish will be featured in 10 contests. Among DePaul's opponents will be Houston, Alabama-Birmingham, and Marquette. Illinois' opponents will include Indiana, Missouri, and Iowa. Notre Dame's opponents will include Maryland, Brigham Young, and Utah.

Bravo will present Abel Gance's 1927 silent masterpiece, *Napoleon,* this month. The four-hour, 27-minute epic will be shown in its entirety with one intermission on November 12 at 8 p.m. (ET) and November 28 at 11 p.m. (ET). The film traces Napoleon's life, from childhood through his early military career to the Paris Convention.

The Weather Channel has added several new program features. They include:

- Football Forecast. An expanded look at forecast conditions for key pro and college games that will air hourly throughout the football season.
- Aches and Pains Index. A forecast of impending weather conditions that may affect people suffering from arthritis, rheumatism, or other weather-related ailments.
- Wakin' Up Weather. Region-by-region forecasts aired weekdays between 6 and 11 a.m. (ET). It will provide a complete, immediate, and capsulized prognosis for the day ahead.
- Good Day Forecast. A regionalized, comprehensive forecast aired twice every hour that zeroes in on forecasts for the morning, afternoon, and evening.
- Eating Smart. Daily feature aimed at helping consumers plan their meals according to current weather conditions. It will also offer tips on seasonal grocery values.
- School Day Forecast. This feature airs during the morning Monday through Friday and at night Sunday through Thursday. It will advise how to dress children for the expected weather. The forecast map will be highlighted with "weather-wear" symbols such as mittens, scarves, and raincoats.

National Hockey League games scheduled in November on ESPN include: November 1, New York Islanders at Washington; November 3, Los Angeles at Philadelphia; November 10, Minnesota at Boston; November 17, Edmonton at New York Rangers; and November 24, Los Angeles at Chicago.

Albert Dieudonne stars in the 1927 film classic, **Napoleon,** *on Bravo.*

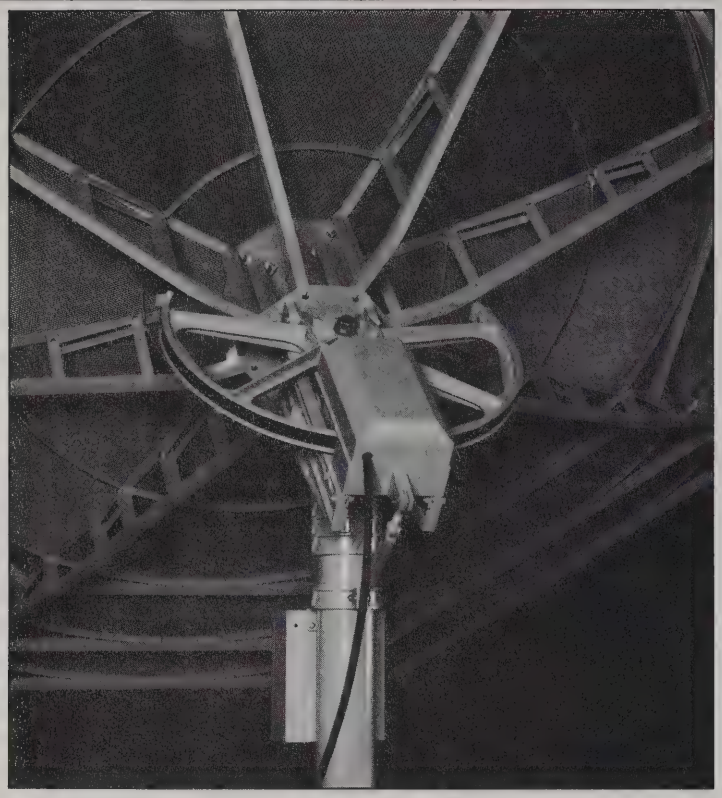
HARDWARE

Infralink Corporation has introduced the Infralink remote-control extension system. The system provides full remote use for any infrared remote controlled video or audio components by using the existing hand-held remote control. Sattrax Satellite Communications is the sales agent for the system. Contact: Sattrax Satellite Communications, 5603 Mahoning Ave. NW, Warren, OH 44483, (216) 847-7432.

Automation Techniques has introduced the DX-200B block downconverter. The manufacturer says the DX-200B is the most inexpensive low-frequency downconverter on the market. It is waterproof and carries a one-year warranty. Contact: Automation Techniques, 1550 North 105th East Ave., Tulsa, OK 74116, (800) 222-6044.

American Olympus Fiberglass has introduced The Final Touch pole cover. The manufacturer says the pole cover can improve the aesthetics of antennas and protect cables from animals and weather. The cover is vented to keep electronics cool if they are mounted inside. Contact: American Olympus Products, P.O. Box 757, Claremont, NC 28610, (704) 241-2220.

RCA has introduced the ProWonder camcorder. The ProWonder weighs 5.5 pounds without the battery and full-size VHS tape. The unit features a ½-inch Saticon pickup tube which delivers a sharp picture at light levels as low as 7 lux. The ⅔-inch electronic viewfinder doubles as a monochrome monitor for viewing immediately after taping. Contact: Judy Fleming, RCA Consumer Electronics, 600 N. Sherman Drive, Indianapolis, IN 46201, (317) 267-5438.



Paraclipse's horizon-to-horizon mount features a new drive system.

Paraclipse has announced several design changes on its antennas. Some of the changes were made to make assembly easier. The mesh panels have been redesigned to fit onto raised extrusions on the ribs, eliminating overlapping of panels. The famous J-clips have been replaced by a simple snap-on clip that can be attached without the use of hand tools. Plastic hold-down strips can be snapped into place with the palm of the hand. Paraclipse has also revamped its polar mount. It now features all-aluminum construction that has reduced its weight to about half as much as Paraclipse's old mount. The new model is a 180-degree, horizon-to-horizon mount with a new motorized drive integrated into the system. Contact: Paraclipse, 3711 Meadowview Drive, Redding, CA, (916) 365-9131.

Birdview Satellite Communications has introduced a new 8½-foot perforated parabolic antenna. Ed Gibson, senior vice president of Birdview's marketing division, said the dish was designed to blend in with the surrounding environment. "The primary reason and main advantage for developing the Birdview perforated antennas was aesthetics," Gibson says. The antenna is made from a solid shee of aluminum that is put through a press to punch out the perforations. The dish weighs 88 pounds and has an advertised wind-load rating of 125 mph. Contact: Tom Pohl, Birdview Satellite Communications, 8500 W. 110th St., Overland Park, KS 66210, (913) 451-2636.

Star Tech has a new satellite receiver available. The Star Tech 1000 features LED channel displa and selection, video fine tuning, polarity inversion, polarity fine tuning, and a built-in modulator. Contact: Star Tech, 5225 Old Orchard Road, Suite 27-C, Skokie IL 60077, (312) 967-0170.

Panasonic has an actuator powe supply on the TVRO market. The PAP-400 is a unit for C-band antenna positioning. It can be use with the Panasonic C-2000 receiv which gives the convenience of remote control operation. The PAP-400 comes complete with a three-digit counter display that reads the pulse from the actuator determine antenna position. Contact: Panasonic, One Panasonic Way, Secaucus, NJ 07094.

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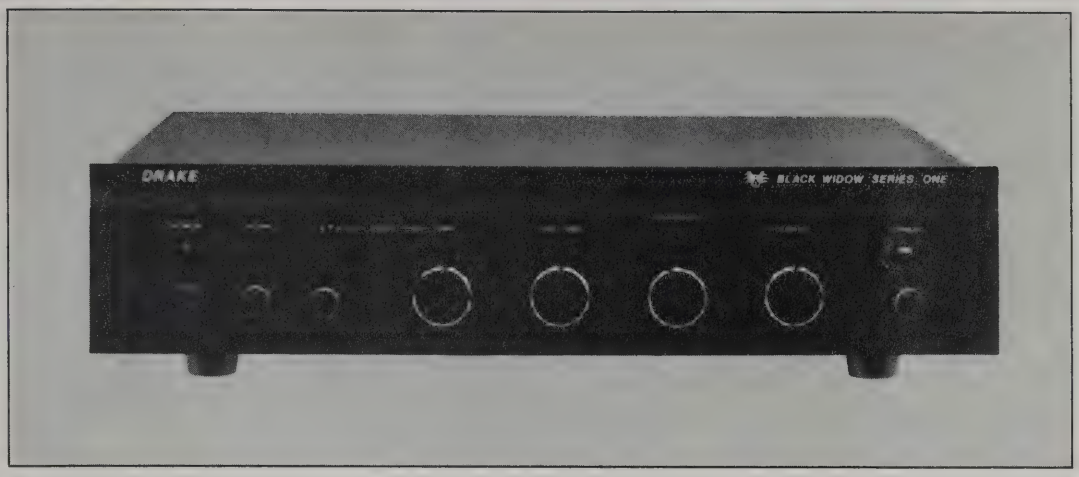
R.L. Drake has introduced a new series of satellite television systems that will be marketed under the name Black Widow. The systems are designed to appeal to the do-it-yourself consumer, according to the company. The series includes a basic system and two step-up versions. The Series 1 system consists of a 6-foot antenna with patio mount, an LNA, a single-conversion receiver, and 100 feet of cable. The Series 2 system has a 6-foot antenna with a polar mount, an automatic positioning system, a block downconversion receiver, and 100 feet of cable. The Series 3 comes with a 6-foot antenna with polar mount, antenna expansion panels that can enlarge the antenna to 8 feet, a deluxe block downconversion receiver, and 100 feet of cable.

Drake has also introduced four new accessories for block systems. The model 2603 two-way block splitter permits independent channel selection on two receivers in the same system. Unlike other power dividers, this splitter will pass a power feed from either receiver to the system's LNB. This eliminates the need to turn on the master receiver to use the auxiliary receiver. Drake's model 2604 four-way amplified block splitter is designed for systems with three or four receivers. The model 2604 performs the same functions as the 2603; also, it contains an amplifier which compensates for the loss of power in dividing the signal three or four times. The model 2605 is a dual polarity input adapter created exclusively for use with Drake's R324B receiver. It allows automatic horizontal/vertical input switching in dual-feed installations. The model 2606 polarizer expansion module allows up to four receivers to adjust polarity skew and format on a priority basis. The module ranks the receivers on a scale of one to four and gives control of the polarity skew to the master receiver whenever it is operating. When the master isn't being used, control is automatically shifted to the next highest ranking receiver that is in operation. Contact: R.L. Drake, P.O. Box 112, Miamisburg, OH 45342, (513) 866-2421.

DX Communications has introduced three new receivers, a new antenna positioner, and a remote sensor. DX's new top-of-the-line receiver is the DSB-700S. The stereo receiver offers dual-channel tuning and a push-button selector with LED indicators for selecting either matrix or discrete stereo mode. The DSB-700S has block downconversion and is C- and Ku-band compatible.



The basic system in Drake's new Black Widow series has a single-conversion receiver and a 6-foot dish.

Another new DX receiver, the DSB-700A, offers most of the same features as the DSB-700S except stereo capability. The DSB-500 receiver is a lower-cost unit. It comes with a separate DSB-60 block downconverter in the same carton. The DSB-500 features an illuminated detent/positune TV-type channel selector, a built-in connection for descramblers, and is both C- and Ku-band compatible.

The DSB-300 East/West antenna positioner power supply was designed to complement DX's DSB-400 antenna positioner. When used with either the DSB-700A or DSB-700S receivers, the DSB-300 allows the satellite identification to automatically appear in the receiver's channel readout. It allows movement of the dish from satellite to satellite with the receiver's DRS-701 remote control. The DRS-701 allows the viewer to control the dish and receiver even while watching a television in another room. Contact: DX Communications, 10 Skyline Drive, Hawthorne, NY 10532, (914) 347-4040.

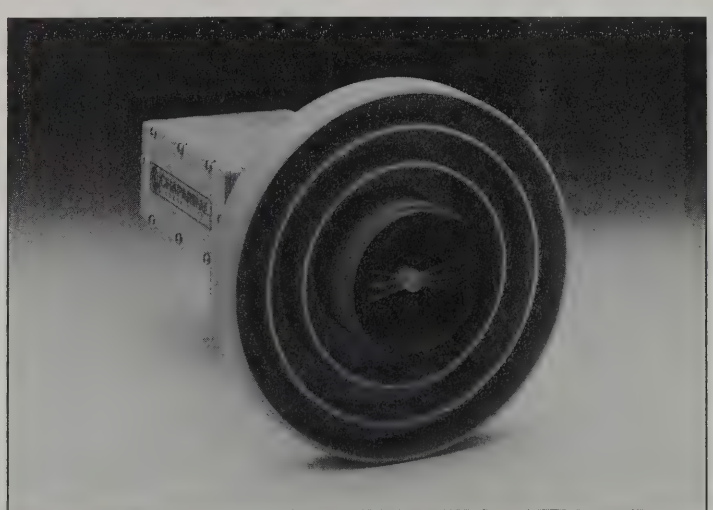
Paullin Industries has introduced the Qik-Pro LNA cover and the Qik-Pro motor cover. Both covers are designed to be installed in about 30 seconds and require no tools or wires for installation. The covers completely seal the LNA or motor so birds and insects can't enter. The covers are made of heavy UV-resistant insulating plastic and are vented to create "chimney effect" air flow to reduce temperature and humidity. Contact: Paullin Industries, 1446 State Route 60, Ashland, OH 44805, (419) 289-2228.

General Instrument has announced that its FAM-300 frequency-agile modulator is now being shipped with the capability to offset the video carrier. The FAM-300 features +60-dBmV output level and incorporates a SAW filter for superior vestigial sideband response. It is scrambling-compatible through separate audio and video IF output connectors. Contact: General Instrument, 2350 W. River Park Drive, Suite 500, Tucson, AZ 85745, (602) 575-5600.

Chaparral Communications has introduced the "golden ring compatible" PolarAmp LNA and LNB. The new units are fitted with a new probe support in the throat that allows for the plastic throat cover to be removed and the golden ring to be inserted. The golden ring will modify the .30 PolarAmp, as well as any Polarotor, Dual Feed or Twister feedhorn to illuminate deep dishes with f/D ratios below .32.

Chaparral has also introduced a new line of block satellite receiver accessories. All accessories are housed in extruded aluminum and connect to the standard 75-ohm coaxial cable between the block downconverter or LNB and the receiver. The accessories include a line amp, two- and four-way splitters, and three V/H-4/12 switches. The switches select between signals from two separate 4- or 12-GHz feeds on command from as many as four receivers, allowing independent selection of either polarity or feed by any receiver. Contact: Chaparral Communications, 2360 Bering Drive, San Jose, CA 95131, (408) 262-2536.

Avantek has introduced two series of new LNBs to be used with any block downconversion receiver using the 430 to 930 MHz or the 950 to 1450 MHz tuning ranges. The LNB-40930 range is designed for the 430 to 930 range and the LNB-41450 series is designed for the 950 to 1450 range. Both units offer noise temperatures of 70, 85, or 100 K, minimum 61-dB gain, and sufficient output power to drive several receivers through a splitter. Contact: Avantek, 481 Cottonwood Drive, Milpitas, CA 95035, (408) 943-4335.



Chaparral's PolarAmp LNA and LNB are golden-ring compatible.

Oregon Satellite Games has introduced Dish It Out! The Satellite TV Game. Dish It Out! is an entertaining and educational board game that allows players to learn about the world of satellite TV ownership. The game uses 200 questions and 75 spaces on a color game board. The game's developers said Dish It Out! can be a useful tool in educating sales prospects about TVRO. "The best way to learn anything that's new and a little confusing is to have fun while learning it," said Tommy Neyhart, one of the developers. "After playing one or two games of Dish It Out!, people will have a good fundamental knowledge of satellite TV and probably even more desire to own a TVRO system." Contact: Oregon Satellite Games, P.O. Box 1054, Roseburg, OR 97470, (503) 672-5490.

FMIC Satellite Systems has introduced a Dish Clean and Lube kit. The kit includes one gallon of soap concentrate, one gallon of silicone fiberglass protectant concentrate, a spray bottle of dish mount lubricant, a dual-sided bucket and measuring cup, and special brushes for the soap and lubricant. A telescopic pole for hard-to-reach spots is also included. Contact: FMIC Satellite Systems, Hwy. 15 N., New Albany, MI 38652.

Hero Communications has introduced the ET-16 antenna. The lightweight, 16-foot antenna is designed for reception in offshore fringe areas. The letters ET stand for "easily transportable," indicating the antenna is significantly lighter than Hero's commercial-grade 16-foot dish. The antenna has a light-duty base and horizon-to-horizon motorized drive. The drive has gear reduction and a modular plug-in motor for ease of operation. The reflector carries a five-year warranty. Contact: Hero Communications, 2470 W. 8th Ave., Hialeah, FL 33010, (305) 887-3203.

Gensat Communications has introduced several new products. The BDT-1200 block downconversion translator is designed to bridge the gap between older 70-MHz single conversion receivers and newer 950 to 1450 MHz block downconverters in multiple-receiver installations. It is directly compatible with most popular 70-MHz receivers and can be customized to interface with any non-standard receiver. It is self-powered and equipped with an outboard CSA/UL-approved AC power module. The BDC 1.2 block downconverter is designed primarily for direct-to-LNA mounting at the focal point of the dish. It has a maximum noise figure of 7 dB. Gensat has also introduced the DDC-070 direct-to-70-MHz downconverter. The DDC-070 was created to solve the stability problems experienced by many 70-MHz receivers. The unit is compatible with any commercially available 70-MHz receiver that has adequate voltage tuning range. Contact: Gensat Communications, 951 Alness St., Downsview, Ontario, Canada M3J 2J1, (416) 736-4555.

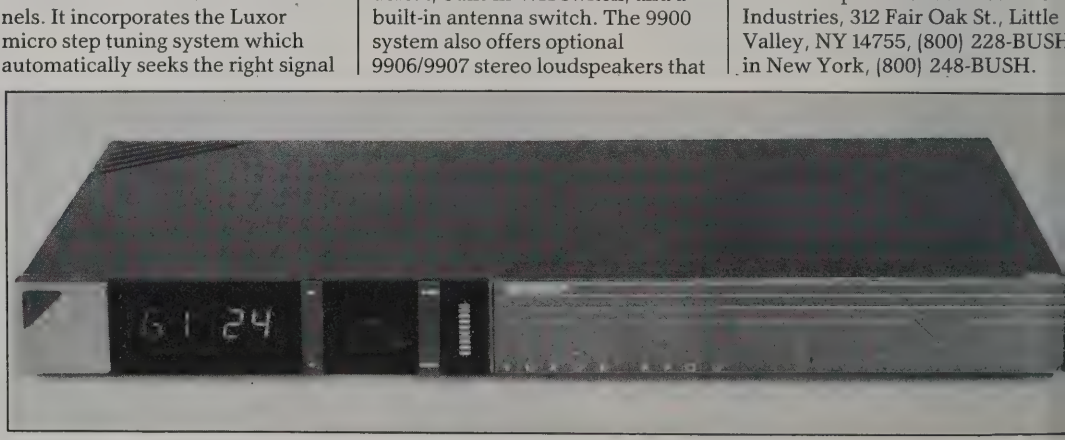
Dish It Out! is a game that can be used as a sales tool.

Luxor has introduced several new electronic components as part of its 9900 block satellite reception system. Luxor has also introduced two new mesh dishes. The 9900 block satellite receiver is the heart of the new system. The receiver is factory programmed for instant recall of 35 satellite locations and 840 channels. It incorporates the Luxor micro step tuning system which automatically seeks the right signal within a given channel frequency. It also has five audio modes that are factory programmed to each transponder for automatic delivery of the proper sound system when a channel is selected. It is C- and Ku-band compatible and has a built-in antenna controller. Using the 9901 remote control, the viewer commands a three-speed actuator which precisely locates satellite and fine tunes antenna position.

Other components in the system include the 9995 companion block receiver, which is designed to function as an add-on to the 9900. It will allow independent channel selection for TVs in other areas of the house. It can also be used as a lower-cost, stand-alone block receiver that is both C- and Ku-band compatible. It has channel selection, video fine tuning, AFC defeat, built-in V/H switch, and a built-in antenna switch. The 9900 system also offers optional 9906/9907 stereo loudspeakers that have sound power of up to 40 watt per channel and are magnetically shielded to permit close location to TV sets. The 9904 actuator interface provides a 35-volt power supply to the drive and actuator arm. The 9904 is designed to be wall mounted. Luxor has also introduced the 9755 block downconverter and the 9726 LNB. Luxor's antennas are available in a 9-foot, 12-rib design and a 10.5-foot 18-rib design. Each antenna incorporates deep-dish parabolic geometry for maximum signal reception. Both antennas are UPS shippable. Contact: Luxor North America, 600 108th Ave. N.E., Suite 539, Bellevue, WA 98004, (800) 245-9995.

ESP Inc. has introduced two new active bandpass filters. The PFG-14 filter is designed for use with the new M/A-Com T-1 receiver, and the PFG-510 is designed for the Scientific-Atlanta HS 800, DX 600, and DX 700 receivers. The PFG-51 filter is also compatible with the Panasonic C 2000 receiver and the STS LSR receiver. Both filters will work with any block receiver with a second IF of 140 MHz or 510 MHz. ESP has also introduced the RFG-3742 RF bandpass device that removes all interfering frequencies below 3.7 GHz and above 4.2 GHz. Contact: ESP Inc., 1084 Whipple Court, Lexington, KY 40580, (800) 842-8737 or (606) 255-3507.

Bush Industries has introduced new audio/video furniture which can accommodate satellite TV receivers as well as videocassette recorders, televisions, and audio components. The model AV762 is part of the SoftForms line that Bush unveiled in January. The cabinet features a distinctive design and four glass-enclosed shelves, three of which are adjustable. The model AV735 is a smaller L-shaped unit that can house most 19-inch TVs plus a videocassette recorder and audio components. Contact: Bush Industries, 312 Fair Oak St., Little Valley, NY 14755, (800) 228-BUSH in New York, (800) 248-BUSH.



Luxor's 9900 receiver is factory programmed to instantly recall 35 satellite locations and 840 channels.

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Spun aluminum antennas made on automatic microprocessor controlled equipment gives you the smoothest, most accurate antenna.
Ten year limited warranty.

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BETA IS BETTER

Check the facts. Just one look at the chart below confirms why thousands of dealers across America have joined the army of **BETA** believers. The **BETA 9** antenna is quality engineered for a lifetime of unsurpassed performance.

Talk to an authorized **BETA 9** dealer and get an expert's opinion. Then call 1-800-542-5353 for a **BETA 9** dealer kit and the location of the distributor nearest you.

	NORMALIZED GAIN PER (1) SQUARE FOOT	PUBLISHED ANTENNA GAIN	WARRANTY	REFLECTOR MATERIAL	TRUE PARA-BOLIC SURFACE	TUNED FEEDHORN	HORIZ MOUN AVAIL ABLE
BETA 9	22.26 dB	40.3	24 Months	Hot-Dipped Galvanized Steel	Yes	Yes	Y
BETA 9 PERF	22.26 dB	40.3	48 Months	Hot-Dipped Galvanized Steel	Yes	Yes	Y
BATTLESTAR	20.55 dB	39.5	1 Year	Non-Galvanized Steel (2)	No	No	N
RAYDX 8½ FOOT	20.96 dB	38.5	1 Year	Expanded Aluminum	No	No	N
GEOTRAC 10½ FOOT	21.03 dB	40.4	2 Years	Expanded Aluminum	No	No	Y
PRODELIN 10 FOOT	21.05 dB	40.0	5 Years	Fiberglass	Yes	No	Y
WINEGARD 10 FOOT	21.05 dB	40.0	1 Year	Perforated Aluminum	Yes	No	Y
ODOM 10 FOOT	21.05 dB	40.0	5 Years	Fiberglass	Yes	No	N
PARACLIPSE 9 FOOT	21.26 dB	39.3	3 Years	Expanded Aluminum	No	Yes	N
JANEIL SEER 9 FOOT	21.46 dB	39.5	1 Year	Non-Galvanized Steel (2)	No	No	Y
GEOTRAC 9 FOOT	21.46 dB	39.5	2 Years	Expanded Aluminum	No	No	Y
DH SPUN 9 FOOT	21.56 dB	39.6	10 Years Prorated	Aluminum	Yes	No	N
PARACLIPSE 12 FOOT	21.77 dB	42.3	3 Years	Expanded Aluminum	No	Yes	N
RAYDX 10½ FOOT	21.03 dB	40.4	1 Year	Expanded Aluminum	No	No	N

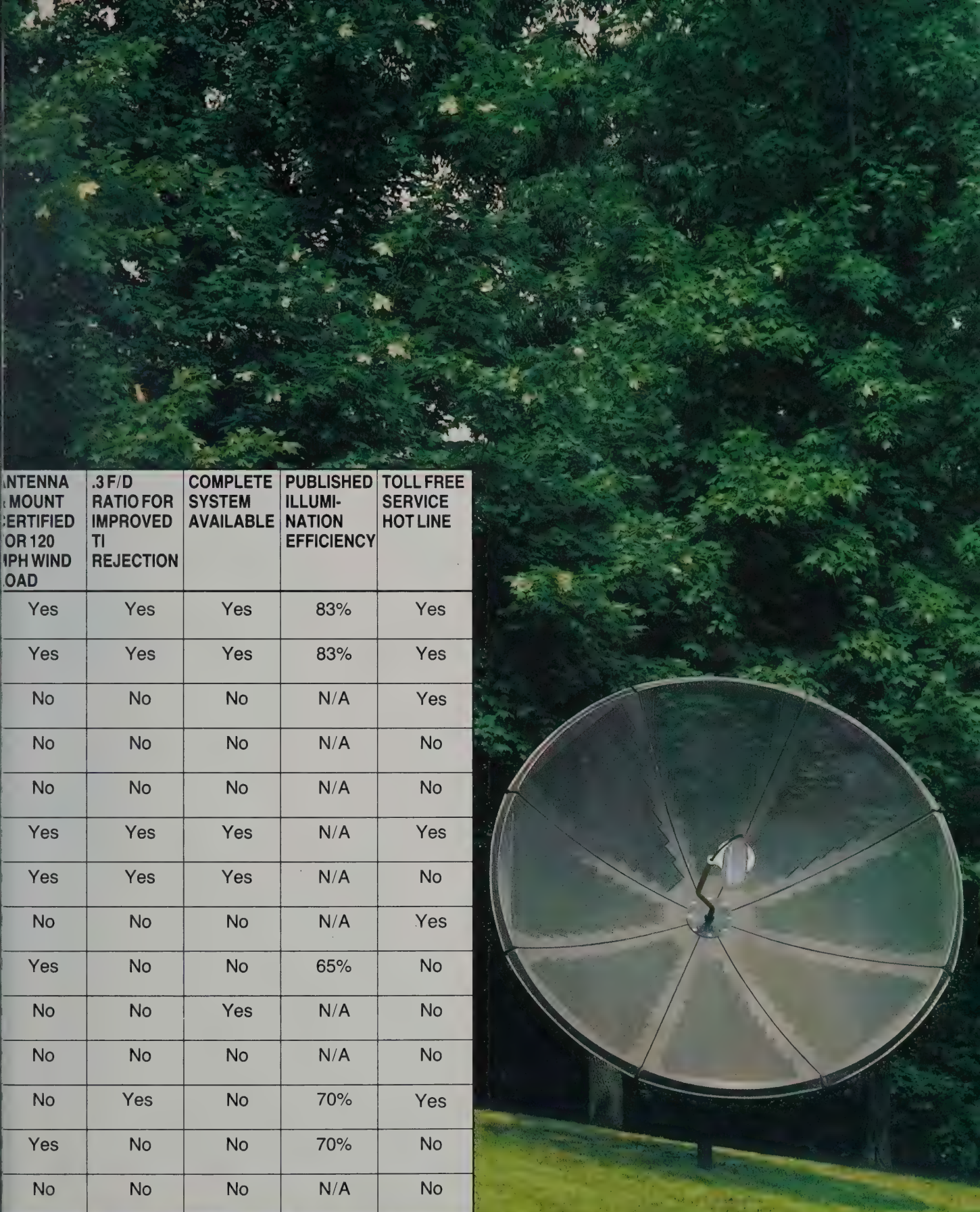
LAUX
COMMUNICATIONS, INC.

4460 South Lake Forest Drive
Cincinnati, Ohio 45242
513/733-1500

(1) Normalized gain $= 10 \log \left[\frac{10^{\frac{GAIN}{10}}}{\pi R^2} \right]$ is the gain of a scaled-down antenna whose area is 1 square foot, and is a direct measure of performance independent of size.

(2) This material is extremely susceptible to rusting and corrosion.

Above information accurate as of 7/1/85



ANTENNA MOUNT CERTIFIED FOR 120 MPH WIND LOAD	.3 F/D RATIO FOR IMPROVED TI REJECTION	COMPLETE SYSTEM AVAILABLE	PUBLISHED ILLUMI-NATION EFFICIENCY	TOLL FREE SERVICE HOT LINE
Yes	Yes	Yes	83%	Yes
Yes	Yes	Yes	83%	Yes
No	No	No	N/A	Yes
No	No	No	N/A	No
No	No	No	N/A	No
Yes	Yes	Yes	N/A	Yes
Yes	Yes	Yes	N/A	No
No	No	No	N/A	Yes
Yes	No	No	65%	No
No	No	Yes	N/A	No
No	No	No	N/A	No
No	Yes	No	70%	Yes
Yes	No	No	70%	No
No	No	No	N/A	No

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WEST COAST INC.
1891 Wardrobe Merced, Calif. 95304
(209) 383-2700

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TOKI TR99 Receiver

M/A COM H-1 Receiver

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- LAUX
- PRODELIN
- RAYDX
- TOKI
- TRUE FOCUS
- WINEGARD

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- HYTEK

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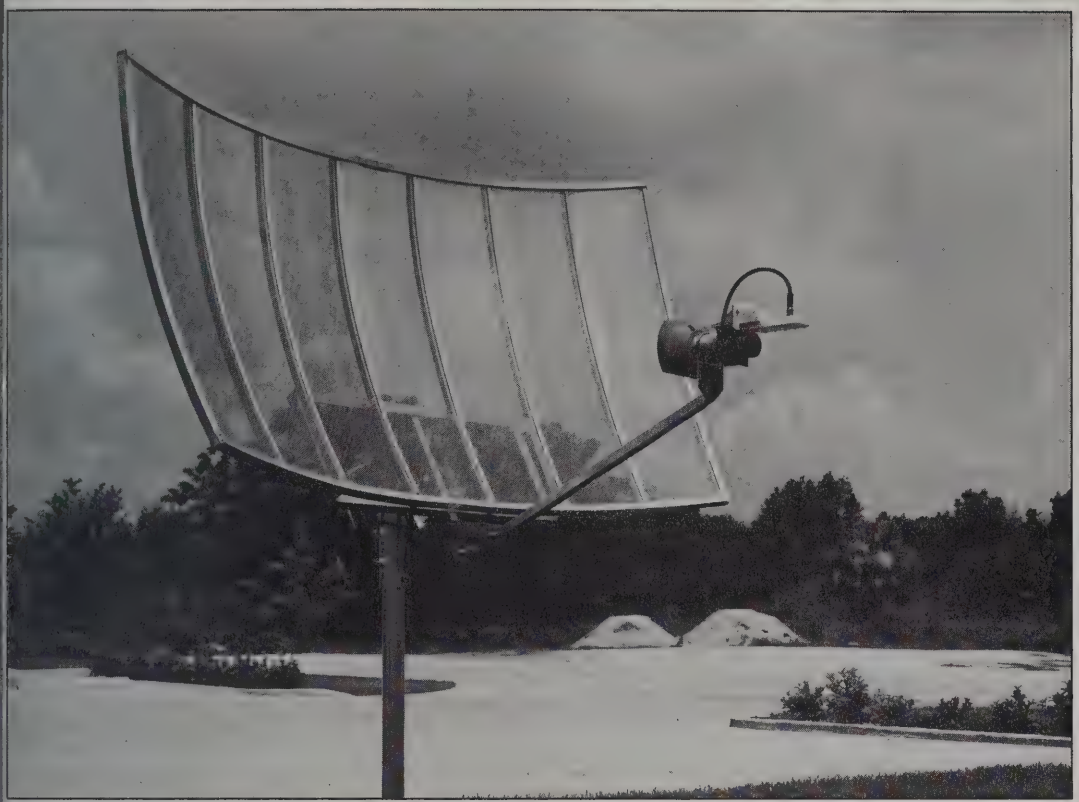

SAMCO says it's possible to assemble the ELF elliptical offset feed antenna in less than one hour.

SAMCO has introduced the ELF, an elliptical offset feed antenna that uses aluminum mesh construction. The antenna is UPS shippable. The entire assembly comes in a 49½ by 18½ by 5½-inch package and weights approximately 60 pounds. According to the manufacturer, the ELF can be assembled in less than 60 minutes. The antenna has a calculated 37 dB gain. The 7-foot reflector has slide-in mesh panels for easy "no-clip" assembly. It is reflective at both C-band and Ku-band. The entire feed support and polar mount assembly is aluminum. The reflector, polar mount, and buttonhook have a five-year limited warranty. Contact: SAMCO, 3111 29th Ave. East, Bradenton, FL 33508, (813) 748-7597.

Monarchy Engineering has introduced a 3.7 to 4.2 GHz low-noise block downconverter that may be used with any block downconversion satellite television receiver using 950 to 1450 MHz tuning range. These units, designated Fujitech Model 1450, are designed, built, and tested by one of Japan's leading manufacturers of tuners. The unit mates with all C-band LNAs to achieve superior performance because of its dielectric resonator. Contact: Monarchy Engineering, 380 Swift Ave., South San Francisco, CA 94080, (415) 873-3055.

Kenwood has introduced the KSR-1000 stereo satellite receiver, the KSP-1000 antenna positioner, the KSA-900 antenna actuator, and the LNB-1000 low-noise block downconverter/amplifier. The KSR-1000 receiver has an 18-satellite signal memory, transponder memory for stereo, Dolby noise reduction, and a wireless remote control. A parental lockout feature allows parents to lock out any two transponder frequencies on a satellite. The antenna can also be completely locked by a pre-programmed numerical code to prevent children from playing with the antenna. The KSP-1000 positioner can be fine-positioned to any of 360 points. All transponder frequencies currently broadcasting have been pre-set at the factory. Contact: Kenwood Electronics, 1315 E. Watsoncenter Road, Carson, CA 90745-6213, (213) 518-1700.

B.E.L.-Tronics, a leader in the manufacturing of police radar receivers, has announced it is expanding into the TVRO industry. Heading the line is B.E.L.'s 4-GHz Micro Eye Satellite Block Receiver. B.E.L. has equipped its stereo receiver with many features including PLL tuning and memory capability. The receiver will be supported by a LNB and a variety of line accessories. Contact: B.E.L.-Tronics, 2422 Dunwin Drive, Mississauga, Ontario, Canada L5L 1J9, (416) 828-1002.

Channel Master has unveiled several new satellite TV products. The new model 6138 receiver is compact in size and features push-button convenience. Format, channel, and polarity selection are button activated with indicator lights for confirmation. A choice of video baseband output for VCRs and monitors as well as built-in channel 2 and 3 for a standard TV receiver is provided. Channel Master has also introduced the model 6141 satellite stereo processor. The processor accepts the subcarrier output from a receiver, processes the signal, and outputs to audio channels for use in a home stereo system. Seven audio pre-sets, factory tuned to the most popular audio subcarrier frequencies, are provided. Dual center meters facilitate manual tuning. The processor also includes a noise-reduction system and front panel control of IF bandwidth and stereo mode.

Channel Master has expanded its dish line with the introduction of an 8-foot, perforated aluminum antenna. The antenna has a 6-petal design and a three-leg feedhorn. The firm has also introduced new adjustable roof mounts for 6- and 8-foot dishes. The mounts can be used on virtually any type of roof and are constructed of heavy-duty steel. Contact: Channel Master, Box 1416, Smithfield, NC 27577, (919) 934-9711. □

Transponder frequencies are pre-set on Kenwood's KSP-1000 positioner.

SMATV PROGRAMMERS

GALAXY 1 MAIN SERVICES

Tr. #	Service	Contact		Address
2	TNN (The Nashville Network)	Roy Mehlman	(203) 965-6420	Group W Satellite, 41 Harbor Plaza Dr., Stanford, CT 06904
3	WGN—Chicago	Chris Bourne	(800) 331-4806 (918) 665-6690	3801 S. Sheridan Rd., Tulsa, OK 74145
5	Showtime—East	Sales Department	(212) 708-1600	1633 Broadway, New York, NY 10019
6	SIN (Spanish International Network)	Susan Catapano	(212) 502-1300	460 West 2nd Street, New York, NY 10036
7	CNN (Cable News Network)	Patty Holland	(404) 827-2250	1050 Techwood Drive NW, Atlanta, GA 30318
8	CNN Headline News	Patty Holland	(404) 827-2250	1050 Techwood Dr. NW, Atlanta, GA 30318
9	ESPN	Roger Williams	(212) 661-6040	355 Lexington Avenue, New York, NY 10017
10	TMC (The Movie Channel)—East	Sales Department	(212) 708-1600	1633 Broadway, New York, NY 10019
11	CBN Cable Network	Tom Hohman	(804) 424-7777	CBN Center, Virginia Beach, VA 23463
14	TMC (The Movie Channel)—West	Sales Department	(212) 708-1600	1633 Broadway, New York, NY 10019
15	WOR—New York	Gilbert Korta	(315) 455-5955	P.O. Box 4872, Syracuse, NY 13221
17	PTL Satellite-The Inspirational Network	Jack Hightower	(704) 542-6000	PTL Center, 7224 Park Road, Charlotte, NC 28279
18	WTBS—Atlanta	Patty Holland	(404) 827-2250	SSS, 8252 S. Harvard, Tulsa, OK 74137
19	Cinemax—East	John Hagerty	(212) 512-5440	HBO Building, 1100 6th Ave., New York, NY 10036
20	Galavision	Andrew Goldman	(212) 502-1300	460 W. 42nd St., New York, NY 10036
22	The Discovery Channel	Joe Maddox	(301) 577-1999	Suite 1260; 8201 Corporate Drive, Landover, MD 20785
22	AVN (Alternate View Network)	Curtis A. Chambers	(318) 226-8776	Head of Texas St., P.O. Drawer 1567, Shreport, LA 71165-1567
23	HBO (Home Box Office)—East	John Hagerty	(212) 512-5440	HBO Building, 1100 6th Ave., New York, NY 10036

GALAXY 1 V.B.I. AUXILIARY SERVICES

Tr. #	Service	Contact		Address
18	New York Stock Exchange	Ed Ward	(212) 623-6244	11 Wall St., New York, NY 10005
18	SSS CableText	Coleman Breland	(404) 949-6600	SSS, 3530 Bomar Rd., Douglasville, GA 30135
18	AP News Cable	Greg Groce	(202) 955-7213	1825 K Street NW, Suite 615, Washington, DC 20006
18	Dow Jones Cable News	Dick Stickney	(609) 952-2000	Box 300, Princeton, NJ 08540

GALAXY 1 SUBCARRIER SERVICES

Tr. #	Service	Contact		Address
3	The Electronic Program Guide	Chris Bourne	(918) 665-6690	3801 S. Sheridan Road, Tulsa, OK 74145
3	Moody Broadcasting Network	Jim Goodrich	(800) 621-7031	820 North LaSalle, Chicago, IL 60610
3	Seeburg/Lifestyle Music	Bonnie Sullivan	(919) 851-5823	5706 New Chapel Hill Rd., Raleigh, NC 27607
3	Seeburg/Lifestyle Adult Contemporary	Bonnie Sullivan	(919) 851-5823	5706 New Chapel Hill Rd., Raleigh, NC 27607
3	UPI Data Cable	Jack Klinge	(303) 771-6868	5970 S. Syracuse, Suite 157, Englewood, CO 80111
3	WFMT—Chicago	Chris Bourne	(918) 665-6690	3801 S. Sheridan Road, Tulsa, OK 74145
3	Satellite Radio Network	Mike Glinter	(704) 552-2103	1 S. Executive Park, Suite 403, Charlotte, NC 28287
3	Cable Sportstracker	Chris Bourne	(918) 665-6690	3801 S. Sheridan Rd., Tulsa, OK 74145

SATCOM F3 MAIN SERVICES

Tr. #	Service	Contact		Address
2	PTL Satellite-The Inspirational Network	Jack Hightower	(704) 542-6000	PTL Center, 7224 Park Road, Charlotte, NC 28279
4	FNN (Financial News Network)/SCORE	Chris Taylor	(213) 450-2412	2525 Ocean Park Blvd., Santa Monica, CA 90405
6	SPN (Satellite Program Network)	Phyllis Vetters	(918) 496-0101	P.O. Box 702160, Tulsa, OK 74170
8	CBN Cable Network	Tom Hohman	(804) 424-7777	CBN Center, Virginia Beach, VA 23463
9	USA Cable Network	Gil Faccio	(212) 408-9100	1230 6th Ave., New York, NY 10020
10	Showtime—West	Sales Department	(212) 708-1600	1633 Broadway, New York, NY 10019
13	HBO (Home Box Office)—West	John Hagerty	(212) 512-1195	HBO Building, 1100 6th Ave., New York, NY 10036
16	HTN (Home Theater Network)	Kathy Peterson	(207) 774-0300	465 Congress Street, Portland, ME 04101
16	TLC (The Learning Channel)	Lenda Washington	(202) 331-8100	1200 New Hampshire Ave. #240, Washington, DC 20036
18	EWTN (Eternal Word Television)	Ginger Scalici	(205) 956-9537	125 Simpson St. NW, Atlanta, GA 30339
18	Reuter Monitor Service (s)	Ron Owens	(212) 732-2400	2 Wall Street, New York, NY 10005
18	NJT (National Jewish Television)	Joel Levitch	(212) 549-4160	2621 Palisade Ave., Riverdale, NY 10463
19	C-SPAN	Brian Gruber	(202) 737-3220	400 North Capitol St. Suite 155, Washington, DC 20001
20	BET (Black Entertainment Television)	Carol Coody	(202) 337-5260	1232 31st Street, N.W., Washington, DC 20007
22	MSN (Modern Satellite Network)	George Umberto	(813) 541-7571	5000 Park St. North, St. Petersburg, FL 33709
22	USA Blackout Network	Andy Besch	(212) 408-9100	1230 6th Avenue, New York, NY 10020
23	Cinemax—West	John Hagerty	(212) 512-5440	HBO Building, 1100 6th Ave., New York, NY 10036

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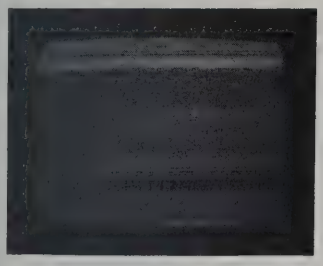

Turn this picture ... into this picture!

Sky Doc Kit B cures almost *any* TI from light "sparklies" to complete channel "wipeouts" on the *first* call, and lets you *close the sale*!

Follow the simple, complete instructions to install the correct filter, and order a replacement for your next *successful* battle with TI.

To cure **complete channel wipeouts**, use the **Terrestrial Tracer (4043A)** in many cases to show the customer a clear channel and to read the exact microwave frequencies. Then you can order the correct **Microwave Notch** filter — having the same suppression as your **Tracer**. The tracer is a special TVRO analyzer which works at 3.7–4.2 GHz, and is connected between the LNA and the downconverter. Therefore, it works on *any* TVRO system where this line is accessible.

Cure **Microwave Overload** due to frequencies outside the 4 GHz satellite band with microwave bandpass filter 4352. It also connects between the LNA and downconverter.

The remaining group of 6 carefully selected interference filters cure a range of TI cases short of actual channel "wipeout." These filters are designed for receivers with a *final* IF frequency of 70 MHz. The kit consists of fixed, tunable and switchable 60 MHz and 80 MHz traps. They have F connectors, but the kit includes cables and adapters to permit their connection to receivers with BNC or SMA connectors.

In addition to the Operating Manual, the **Kit** includes *ASTI* — a 250 page interference manual — the first of its kind. It shows how to survey to *avoid* TI, how to build economical blocking screens to reduce filtering costs, how to ground your equipment against VHF signals, and much more. Its authors have reduced over 9,000 cases of TI!

The **Kit** comes in a rugged field carrying case for component protection. Its professional appearance tells your customer that you are in the business of providing TVRO — regardless of TI!

Stop passing up prospects who have TI at their site. Make *customers* of them. Sell *more* in areas now avoided by you — and your competition!

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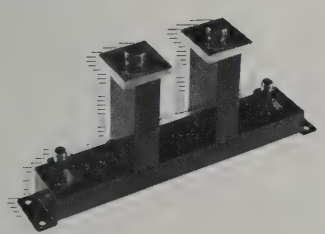
For Field Assistance: 1-800-448-1666 8–5 EST Monday/Friday
In NY/AK/HI/Canada collect: 315-437-3953 8–5 EST Monday/Friday

MICROWAVE FILTER COMPANY, INC.
6743 KINNE ST., E. SYRACUSE, NY 13057

*(Sky Doc Kit B is identical to our full Sky Doc Kit except that it does not include the commercial preselector 3923T.)



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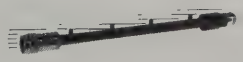
The Terrestrial Tracer (4043A)
A special tunable notch filter for diagnosing and curing severe TI (channel **"wipeouts"**).

Low cost
Fixed-tuned
60 & 80 MHz Traps

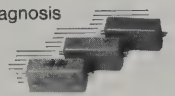
Combination
Fixed-tuned
60/80 MHz
Trap

ASTI
TVRO TI Handbook
250 pages containing 9,000 cases of TI experience.



4352
Microwave Bandpass Filter
for curing overload due to microwave carriers outside the 4 GHz satellite band.

Switchable
60/80 MHz Traps
for quick diagnosis or resale.



Tunable 60/80 Traps
for *heavier* TI.

Adapters and Cables
for servicing receivers with BNC and SMA connectors. (In addition to standard type F receivers.)

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SATCOM F3 SUBCARRIER SERVICES

Tr. #	Service	Contact		Address
2	Satellite Radio Network	Mike Glinter	(704) 552-2103	1 S. Executive Park, Suite 403, Charlotte, NC 28287
3	Genesis Cable Storytime	Arthur Doerksen	(204) 949-1581	1036-167 Lombard Ave., Winnipeg, MB 23B OV3
3	Satellite Jazz Network	Saul Levine	(213) 475-8525	KKGO, 10880 Wilshire Blvd., Los Angeles, CA 90024
6	StarShip Adult Contemporary	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
6	StarShip Country and Western	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
6	StarShip Comedy	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
6	StarShip '50s, '60s, and '70s	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
6	StarShip Big Bands	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
6	In Touch	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
6	StarShip Hits	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
7	ESPN Affiliate Informational Network	Roger Williams	(212) 661-6040	355 Lexington Ave., New York, NY 10017
8	StarShip Jazz	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
8	StarShip Contemporary Christian	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137
8	StarShip Easy Listening	Mark Dempsey	(918) 481-0881	8252 South Harvard, Tulsa, OK 74137

SATCOM F3 V.B.I. AUXILIARY SERVICES

Tr. #	Service	Contact		Address
6	Reuter News-View	Kurt Hansen	(212) 732-2400	2 Wall Street, New York, NY 10005

TELSTAR 303 MAIN SERVICES

Tr. #	Service	Contact		Address
1	CMTV (Country Music Television)	Jim Cavazzini	(212) 686-4340	30 East 40th Street Suite 507, New York, NY 10016
2	SelecTV	Toni Cosenza	(213) 827-4400	4755 Alla Road, Marina del Rey, CA 90291
18	American Extasy	Sales Dept.	(212) 696-1221	419 Park Ave., Rm 1400, New York, NY 10016
22	KTVT	Chris Bourne	(918) 665-6690	3801 S. Sheridan Rd., Tulsa, OK 74145

TELSTAR 303 SUBCARRIER SERVICES

Tr. #	Service	Contact		Address
18	FM America	Carol Harris	(801) 570-1000	57 W. South Temple, #800, Salt Lake City, UT 84101

WESTAR 5 MAIN SERVICES

Tr. #	Service	Contact		Address
2	The University Network	Larry Dudley	(818) 246-8124	1501 South Glendale Ave., Glendale, CA 91205
22	The Meadows Racing Network	Chris Mastandrea	(412) 963-6565	890 Constitution Blvd., New Kensington, PA 15068
24	PPV—The Pay-Per-View Channel(s)	Space Age Video	(408) 559-8812 (800) 221-9096	2902 Almaden Expwy., San Jose, CA 92125
24	FUN Weekend PPV (s)	Space Age Video	(408) 559-8812 (800) 221-9096	2902 Almaden Expwy., San Jose, CA 92125

SATCOM F4 MAIN SERVICES

Tr. #	Service	Contact		Address
2	Bravo	Henry Gross	(516) 364-2222	100 Crossways Park West, Woodbury, NY 11797
6	Biznet, The American Business Network	Frank Philpot	(202) 463-5834	1615 H Street N.W., Washington, DC 20062
7	WCN (World Christian Network)	Ray Kassis	(305) 632-1000	1150 West King Street, Cocoa, FL 39222
10	AMC (American Movie Classics)	Henry Gross	(516) 364-2222	100 Crossways Park West, Woodbury, NY 11797
12	The Playboy Channel	Henry Gross	(516) 364-2222	100 Crossways Park West, Woodbury, NY 11797
13	NESN (New England Sports Network)	John Claiburne	(617) 536-9233	70 Brookline Ave., Boston, MA 02215
19	WPIX—New York	Chris Bourne	(918) 665-6690	3801 South Sheridan Road, Tulsa, OK 74145
21	The Nostalgia Channel	Peter Flint	(214) 869-0877	2 Dallas Communications Complex, Suite 225, Irving, TX 75039
23	Odyssey	Tom Shaw	(305) 632-1000	1150 W. King St., Cocoa, FL 32922

SATCOM F4 SUBCARRIER SERVICES

Tr. #	Service	Contact		Address
21	National Broadcast Museum Superstation	Bill Bragg	(214) 748-1112	2001 Plymouth Rock, Richardson, TX 75081

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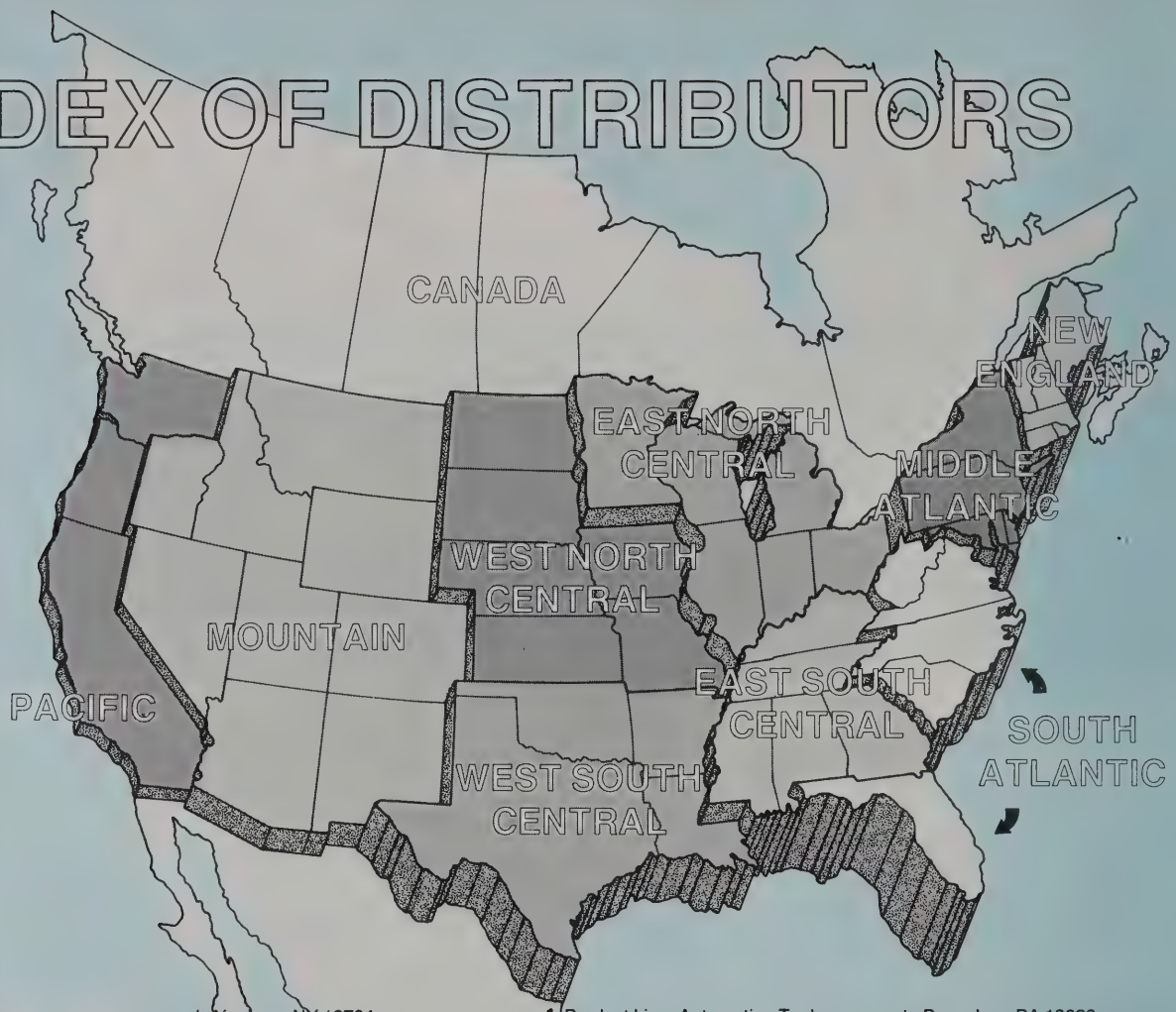

NEW ENGLAND

Earth Terminal TV, Ltd.
155 Bemis Rd., RFD #12
Manchester, NH 03102
(603) 625-6659
Product Line: **Paraclipse, Stardish**, Automation Techniques, Avcom, California Amplifier, Dexcel, Electrohome, General Instrument, Hero, Houston Tracker, Microsat, Pro-Sat, Sat Labs
Contact: Sales Department

Satellite Video Services N.H.
RFD #2 Harriman Hill Rd.
Raymond, NH 03077
(603) 895-3182
Product Line: **Luxor, M/A-Com, Norsat, Uniden, Winegard**, Conifer, Gensat, Houston Tracker, Laux
Contact: Sales Department

Television Entertainment Products
1399 Longmeadow St.
Longmeadow, MA 01106
(413) 567-5261
Product Line: **Arunta, Conifer, Lowrance, Paraclipse, Phantom, U.P. Dish, Uniden,** Amplica, California Amplifier, Chaparral, DX, ECI, Jerrold, Luxor, MTI, Toki
Contact: Jim or Ann Humphries

MIDDLE ATLANTIC

Centennial Communications
585 Yonkers Avenue
Yonkers, NY 10704
(914) 476-2100 (NY)
(800) 431-1922
Product Line: **DX, Houston Tracker, Paraclipse, Skytrac, Toki,** Chaparral, Locom, Luxor, MTI
Contact: Richard Greer

Cornell Energy Systems
Box 169, Rt. #13
Williamstown, NY 13493
(315) 964-2216
(800) 225-3535
Product Line: **Paraclipse,** Automation Techniques, Chaparral, DX, Eclipse, Gillaspie, Hastings, Locom, Luxor, MTI, Odom
Contact: Al Mendel

Courtney Lock and Hardware
2242 Jerome Ave.
Bronx, NY 10453
(212) 733-1262
(914) 638-3461
Product Line: **Arunta, Conifer, Lowrance, Paraclipse, Phantom, U.P. Dish, Uniden,** Amplica, California Amplifier, Chaparral, DX, ECI, Jerrold, Luxor, MTI, Toki.
Contact: Chuck or JoAnne Zipser

Cumberland Electronics
642 South 20th
Harrisburg, PA 17105
(717) 233-5883
Product Line: Chaparral, Houston Tracker, KLM, Luxor, Prodelin, Winegard
Contact: Robert Clave

Finger Lakes Communication Company
189 Clark St.
Auburn, NY 13021
(315) 252-3151
(800) 248-3522 (NE)
Product Line: Automation Techniques, ERL, Houssen, Houston Tracker, Maxum, Newton, Odom, TDF/Hytek
Contacts: Joe Fronczek
Patty Woleslagle

National Satellite Communications
21st Century Park
Clifton Park, NY 12065
(518) 383-2211
(800) 522-3538 (NY)
(800) 833-4485
Product Line: **ADM, Avantek, Avcom, Chaparral, Cosima, DX, Drake, Earth Terminals, Houston Tracker, Janeil, Odom, Paraclipse, STS,** Automation Techniques, Belden, California Amplifier, Fanon, Gillaspie, Kaul Tronics, Lowrance, Microwave Filter, Nexus, Pro-Sat, Vector
Contacts: Sally DiDonato
Mary Mason

Satellite Video Services
RR #1, Box 85-S
Paul Saxe Rd.
Catskill, NY 12414
(518) 678-9581
Satellite Video Services PA
317 E. Pleasant Valley Blvd.
Altoona, PA 16602
(814) 942-5003
(800) 242-3860 (PA)
Satellite Video Services WNY
E. Ave. Ext.
Hornell, NY 14843
607-324-3435
800-641-0018 (NY)
Product Line: **Luxor, M/A-Com, Uniden, Winegard**, Gensat, Houston Tracker, Laux
Contact: Sales Dept.

Skyview Satellite Systems
1445 Ford Rd.
Bensalem, PA 19020
(215) 638-4400
(800) 523-6570
Product Line: **California Amplifier, Comtech, Gillaspie, HomeCable, Northwest Labs, Orion, Satellite Ground Components, Superwinch, Unlimited Fiberglass,** Chaparral, Dexcel, General Instrument, Luxor, MTI
Contact: Jim Gall

Starvision
679 Remsen Ave.
Brooklyn, NY 11236
(718) 345-8000
Product Line: **Eclipse, Continental TDF/Hytek,** Amplica, Danex, Dexcel, Gillaspie, Micro-sat, Sat-Tec
Contact: Barbara Crinnian

Sun Satellite Systems
1341 East Cumberland St.
Lebanon, PA 17042
(717) 272-2064
(800) 233-4501 (PA)
(800) 233-0450
RD3, P.O. Box 44C
Dover, Delaware 19901
(302)647-2070
Product Line: **Chaparral, Focil, Hytek, Janeil, Kaul-Tronics, Laux, Norsat, PenTec-MTI, Pro-Sat, Prostar, Raydx, Regency, Rohn, STS, Skybeam, SpaceVision, Uniden**
Contacts: Larry Walton
Ralph Walton

EAST NORTH CENTRAL

American Microcom
P.O. Box 1006
Route 2

November 1985
(Valid through February 1, 1986)

1	41	81	121	161	201	241	281
2	42	82	122	162	202	242	282
3	43	83	123	163	203	243	283
4	44	84	124	164	204	244	284
5	45	85	125	165	205	245	285
6	46	86	126	166	206	246	286
7	47	87	127	167	207	247	287
8	48	88	128	168	208	248	288
9	49	89	129	169	209	249	289
10	50	90	130	170	210	250	290
11	51	91	131	171	211	251	291
12	52	92	132	172	212	252	292
13	53	93	133	173	213	253	293
14	54	94	134	174	214	254	294
15	55	95	135	175	215	255	295
16	56	96	136	176	216	256	296
17	57	97	137	177	217	257	297
18	58	98	138	178	218	258	298
19	59	99	139	179	219	259	299
20	60	100	140	180	220	260	300
21	61	101	141	181	221	261	301
22	62	102	142	182	222	262	302
23	63	103	143	183	223	263	303
24	64	104	144	184	224	264	304
25	65	105	145	185	225	265	305
26	66	106	146	186	226	266	306
27	67	107	147	187	227	267	307
28	68	108	148	188	228	268	308
29	69	109	149	189	229	269	309
30	70	110	150	190	230	270	310
31	71	111	151	191	231	271	311
32	72	112	152	192	232	272	312
33	73	113	153	193	233	273	313
34	74	114	154	194	234	274	314
35	75	115	155	195	235	275	315
36	76	116	156	196	236	276	
37	77	117	157	197	237	277	
38	78	118	158	198	238	278	
39	79	119	159	199	239	279	
40	80	120	160	200	240	280	999

SATELLITE DEALER

Reader Service Card

Name: _____

Title: _____

Company: _____

Street: _____

City: _____ State: _____ Zip: _____

Telephone: (___) ___ - _____

Please circle the appropriate response for each question:

1) What is the nature of your business?
- a) manufacturer
- b) distributor
- c) retailer/owner
- d) retailer
- e) manufacturer's representative
- f) independent sales representative
- g) public relations

2) What is your purchasing authority?
- 1) recommend
- 2) specify
- 3) approve

3) What is your annual sales volume?
- a) under $100,000
- b) $100,000 to $499,999
- c) $500,000 to $999,999
- d) $1,000,000 to $4,999,999
- e) $5,000,000 or more

4) Is this product inquiry for?
- 1) immediate purchase
- 2) future information

5) Was this issue addressed to you?
- a) yes
- b) no

6) According to product volume, your business is primarily related to:
- 1) home satellite systems
- 2) commercial satellite systems
- 3) home video equipment sales
- 4) commercial video sales
- 5) home electronics & appliances

7) What other magazines do you subscribe to?
- 1) Satellite ORBIT
- b) Satellite Dealer
- c) Video
- d) Video Store
- e) Video Business
- f) CES
- g) Video Review
- h) Video Product News
- i) AudioVideo International

8) Are you involved in the Satellite ORBIT Dealer Program?
- a) yes
- b) no

Circle #999 to receive information about our Dealer Program.

IF YOU WANT MORE INFORMATION . . .

*These cards are provided for your convenience to request **free** information about the products advertised in Satellite DEALER. Circle the numbers that correspond to the advertisements for products that interest you and drop the card in the mail. Your information request will be automatically forwarded to the appropriate company.*

PASS IT ON!

Why not share the information in this issue with a colleague? He can use this card to gather additional material for his own use.

PLEASE NOTE:

In order to process your inquiry, we need all the information on the card completed. Please be sure to supply your full name and address.

Dealer Reaction Card

If you have a complaint or comment about your distributor or manufacturer and can't get satisfaction, *Satellite DEALER* magazine would like to know. Use the space below to send us your thoughts. This information will be forwarded to the appropriate distributors and/or manufacturers for action.

_____

_____

_____

_____

_____

_____

Your Name _____ **Position** _____

Company You Represent _____ **Phone** _____

Street Address _____

City _____ **State** _____ **Zip** _____

This information will be complied by *Satellite DEALER* magazine, but will not be published without your consent.

Dealer Reaction
Satellite DEALER, P.O. Box 29, Boise, ID 83707

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 217 CLINTON, IA

POSTAGE WILL BE PAID BY ADDRESSEE

Reader Service Program
Satellite DEALER
P.O. Box 2950
Clinton, IA 52735

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 4 BOISE, ID

POSTAGE WILL BE PAID BY ADDRESSEE

DEALER REACTION
Satellite DEALER
P.O. Box 29
Boise, ID 83707

Satellite DEALER Subscription Offer!

FREE!

Don't miss this exciting opportunity. Sign up for your free subscription to *Satellite Dealer* today!

QUALIFICATION FORM FOR FREE SUBSCRIPTION.
TO QUALIFY FOR A FREE SUBSCRIPTION, ALL QUESTIONS MUST BE ANSWERED.
The publisher reserves the right to serve only those individuals who, in the opinion of the publisher, qualify for a free subscription.

1. I wish to receive/continue to receive Satellite DEALER free of charge:

☐ YES ☐ NO

Your signature _____ Date _____

Your name (Please print) _____ Title _____

Company name _____

Company street address _____

City _____ State _____ Zip _____

(If address label is incorrect, please make changes on label.)

2. Which best describes your title? (Check one only)

A ☐ Owner
B ☐ President
C ☐ Vice-president
D ☐ General Manager
E ☐ Manager
F ☐ Buyer
G ☐ Merchandise Buyer
H ☐ Sales Manager
I ☐ Sales Person
J ☐ Service Technician
Z ☐ Other (Please specify) _____

3. What category best describes your business at this location? (Check one only)

A ☐ Satellite/TVRO Store
B ☐ Video Specialty Store
C ☐ TV/Audio Store
D ☐ Audio/Video Chain Store
E ☐ Audio/Video/TV/Hi-Fi Store
F ☐ Household Appliance/Radio/TV Store
G ☐ Hi-Fi Specialty Store
H ☐ Camera/Photographic Store
I ☐ Auto Sound Store
J ☐ Automotive Store
K ☐ Auto Parts & Accessory Store
L ☐ Music Store
M ☐ Furniture Store
N ☐ Hardware Store
O ☐ Department Store
P ☐ Mass Merchandiser
Q ☐ Mail Order/Catalog House/Showroom
R ☐ Distributor
S ☐ Manufacturer's Representative
T ☐ Manufacturer
Z ☐ Other (Please specify) _____

4. Please indicate your company's gross annual sales (Check only one):

A ☐ Over $5,000,00
B ☐ $5,000,000-$1,000,000
C ☐ $999,999-$500,000
D ☐ $499,999-$250,000
E ☐ Under $250,000

5. Please indicate the number of sales outlets for your company:

A ☐ One
B ☐ Two
C ☐ Three-Five
D ☐ Six-Ten
E ☐ Over 10

6. Products merchandised (Check all that apply):

1 ☐ Antennas
2 ☐ Actuators
3 ☐ Modulators
4 ☐ Stereo Processors
5 ☐ Feedhorns
6 ☐ Receivers
7 ☐ LNAs
8 ☐ Polarizers
9 ☐ Antenna Mounts
10 ☐ Cable & Connectors
11 ☐ Televisions
12 ☐ Television Accessories
13 ☐ Home VCRs
14 ☐ Projection TVs
15 ☐ Videodisc Players
16 ☐ Video Games
17 ☐ Hi-Fi Components
18 ☐ Stereo Compacts & Consoles
19 ☐ Radio Cassette Combinations
20 ☐ Blank Tapes & Software
21 ☐ Home Computers
22 ☐ Audio Accessories
23 ☐ Car Stereos
24 ☐ CB Equipment
25 ☐ Other (Please specify) _____
26. None of the Above ☐

7. If distributor or manufacturer, indicate number of dealers you have: _____

Please send Satellite DEALER to the following employees at this location:

(1) _____ Name _____ Title
(2) _____ Name _____ Title
(3) _____ Name _____ Title
(4) _____ Name _____ Title
(5) _____ Name _____ Title
(6) _____ Name _____ Title
(7) _____ Name _____ Title
(8) _____ Name _____ Title
(9) _____ Name _____ Title
(10) _____ Name _____ Title
(11) _____ Name _____ Title
(12) _____ Name _____ Title
(13) _____ Name _____ Title
(14) _____ Name _____ Title
(15) _____ Name _____ Title

8. Are you currently participating in *Satellite ORBIT'S* Dealer Program?

☐ YES ☐ NO

FOLD HERE

PLACE STAMP HERE
The Post Office will not deliver mail without postage.

Satellite **DEALER**
P.O. Box 70552
Pasadena, CA 91107

STAPLE HERE

ODOM ANTENNAS, INC.

BECAUSE QUALITY COUNTS . . .

Are You a Professional Dealer Or do You Just Sell Satellite TV Systems?

If you are a professional satellite TV dealer your reputation is very important to you and your customers.

What will happen to that reputation five or ten years from now when steel antennas begin to rust-out or after the next hail or windstorm blows through and those mesh antennas have to be repaired or replaced — **At Your Expense?**

Check the **written warranty** on the antennas you carry — if one exists — and read the fine print. Don't make a mistake now that will haunt you for years to come. Invest in Quality that will stand the test of time and the elements.

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THINK ABOUT IT! If you want durable, long lasting satellite TV antennas that will continue to perform for years to come, rely on fiberglass. If you want top quality fiberglass, rely on ODOM ANTENNAS, INC.

ODOM ANTENNAS, INC.

THE ANTENNA SOURCE

P.O. Box 1017
Beebe, Arkansas 72012

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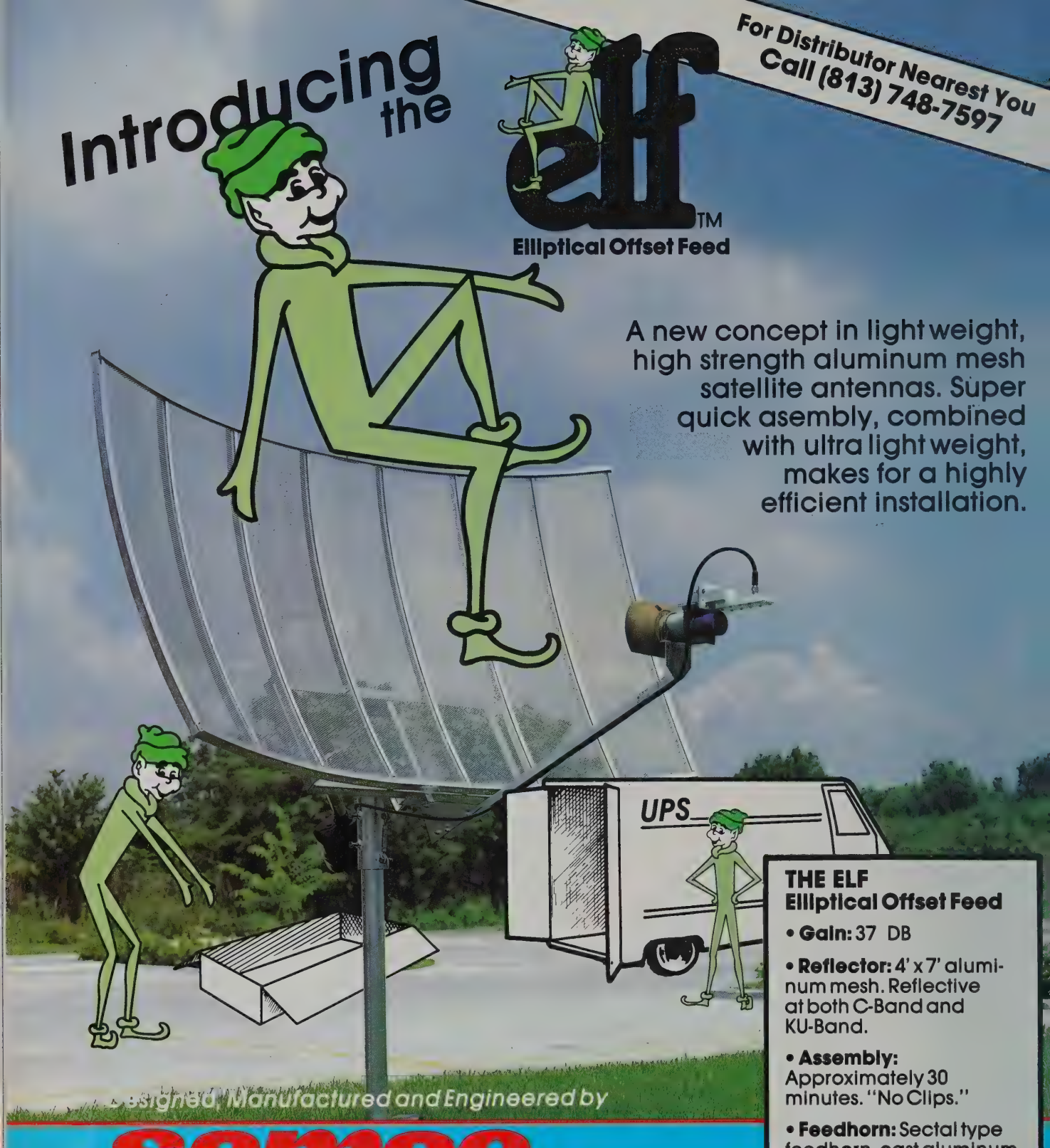
(501) 882-6485

Circle 144 on the Reader Service Card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elf™
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For Distributor Nearest You
Call (813) 748-7597
A new concept in lightweight, high strength aluminum mesh satellite antennas. Super quick asembly, combined with ultra lightweight, makes for a highly efficient installation.
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THE ELF
Elliptical Offset Feed

- **Gain:** 37 DB
- **Reflector:** 4' x 7' aluminum mesh. Reflective at both C-Band and KU-Band.
- **Assembly:** Approximately 30 minutes. "No Clips."
- **Feedhorn:** Sectal type feedhorn, cast aluminum design. (Patent Pending) High efficiency. Compatible with Polar Rotor 1® type receivers.
- **Wind Loading:** Rotated at 125 M.P.H.
- **Shipping Weight:** UPS Shippable at 65 lbs.
- **Warranty:** Manufacturer's full 5-year limited warranty.

Circle 177 on the Reader Service Card

Georgetown Rd.
Cambridge, OH 43725
(614) 439-7771
(800) 421-3661 (OH)
(800) 421-7131
Product Line: **California Amplifier, Chaparral, Cincinnati Fiberglass, Drake, Houston Tracker, Janeil, Uniden, Unlimited Fiberglass,** Wilson
Contacts: Denise Stover
Jan Ackley

American Television Systems
1955 Midway Dr., Suite C
Twinsburg, OH 44087
(216) 425-7000
(800) 362-1127(OH)
Product Line: **Blonder-Tonque, DX, Jerrold, Miralite, Times-Wire,** Apollo, Drake, M/A-Com, Prodelin
Contact: Pete Johnson

Bursma Electronics
1030 Scribner N.W.
Grand Rapids, MI 49504
(616) 459-4325
Contact: Doug Dornbos
1757 Park Drive
Traverse City, MI 49684
(616) 941-5015
Contact: Dave Zempel
513 E. Kalamazoo Ave.
Kalamazoo, MI 49007
(616) 345-8567
Contact: Travis Swagler
Product Line: **Channel Master, Isis, Pro-Sat, Regency**

CVS Systems
206 N. Baldwin Ave.
Marion, IN 46952
(317) 662-0037
(800) 382-0283 (IN)
(800) 821-3485
Product Line: Boman, California Amplifier, Chaparral, Drake, Houston Tracker, Paraclipse, Sat-Tec, Toki, Uniden, Winegard
Contact: Judy Doyle

Cayson Electronics
2235 W. Mound Rd.
Decatur, IL 62526-9990
(217) 877-7954
(800) 382-1811
Product Line: Anderson Scientific, Cayson, Chaparral, Drake, Gillaspie, Hammerblow, Luxor, Maxum, Norsat, Pro-Sat, STS, Space Vision, Spectrum, Uniden
Contact: Gerald Cayson
Contact: Sales Dept.

Chief Industries
East Maple Street
Rensselaer, IN 47978
(219)866-4121
Contacts: Larry Bean
Dennis Onken
1703 S. Baker Street
Effingham, IL 62401
(217)347-0469
Contacts: Lonnie Rhodes
Doug Hayes
Product Line: Arcfinder, Chaparral, Dexel, Gentek, Insta-Foam, Pro-Brand, Space Vision, Toki, USA, Uniden

Consumer Satellite Systems
112 Shadowlawn Dr.
Noblesville, IN 46060
(317) 845-4400
(800) 321-9637
Contact: Mike Griffith
2115 Lexington Ave.
Evansville, IN 47712
(812) 424-5882
(800) 542-9542
Contact: Rick Gooden
3862 44th St. SE
Grand Rapid, MI 49508
(616) 9881
(800) 862-9850
Contact: Don Cook
910-912 Detweiller Dr.
Peoria, IL 61615
(309) 692-4630
(800) 367-9531
Contact: John Becker
Product Line: **Bearcat, Blonder-Tongue, Chaparrel, Conifer, DX, Hammerblow, Isis, Janeil, Kaul Tronics, Laux, M/A-Com, M/A-Com Omni, MTI, O'Sullivan, Spectra, STS, Technica, Uniden, Unimesh**
Contact: Brian Segal

Cornell Energy Systems
10020 Brecksville Rd.
Brecksville, OH 44141
(216) 526-9333
(800) 255-3535
Product Line: **Paraclipse,** Automation Techniques, Chaparral, DX, Eclipse, Gillaspie, Locom, Luxor, MTI
Contact: Al Mendel

Delta Satellite
One Echo Plaza
Cedarburg, WI 53012
(414) 375-1000
(800) 558-5582
(800) 242-2290 (WI)
Product Line: **Anderson Scientific, Lowrance, TDF/Hytek,** Amplica, California Amplifier, DX, Dexcel, Draco, Drake, Houston Tracker, Janeil, KLM, Paraclipse, STS, Uniden
Contact: Mike Hansen

Dynasat
800 Touhy
Elk Grove Village, IL 60007
(312) 981-8686
Product Line: **Dynasat, Prodelin,** Chaparral, Gensat, Lowrance M/A-Com, Omni Spectra
Contacts: Pat Nutter
John Bergquist

Earth Star Communications
7401 Old Central Ave. NE
Fridley, MN 55432
(612)786-1916
Product Line: **Arcfinder, Chaparral, Continental, Cosmos 2, Lowrance, Microwave Filters, Raydx, ScanMaster, Sigma, VSC,** Anderson, California Amplifier, Drake, Houston Tracker, Luxor, MSE, Vidare
Contacts: Dan Fish
Maline Fish
Jim Durand

Flame Satellite Company
1508 1st Ave.
Evansville, IN 47710
(800) 742-3778 (IN)
(800) 457-3761
Product Line: Arcfinder, Beta-9, Cosima, CZ Labs, Intersat, Janeil, Jensen, Kaul Tronics, Laux, MSE, Space Vision, STS, TDF/Hytek
Contacts: Debbie Ames
Jo Ellen Burnett
Mike Talbert

Hoosier Electronics
P.O. Box 3300
Terre Haute, IN 47803
(812) 238-1456
Product Line: **Avantek, Houston Tracker, KLM, Luxor, MTI, Regency,** ADM, Avcom, California Amplifier, Chaparral, Drake, Earth Terminals, Gillaspie, Luly, SRI, STS
Contacts: Jeff Vicars
Maxine Burnes

Horizon Satellite Systems
345 Burnett Rd.
West Lafayette, IN 47906
(317) 742-6346
Product Line: **Dexcel,** California Amplifier, Janeil, Luxor, Skywalker, Winegard
Contact: Brad Von Holten

John-Co Electronics
Route 1
Auburndale, WI
(715) 652-3175
Product Line: **Superior,** Automation Techniques, Drake, MTI, Starduster, Uniden
Contact: John Hrusovszky Jr.

L.E.S. Distributors
51100 Bittersweet Rd.
Granger, IN 46530
(800) 348-2888
(800) 552-2961(IN)
Product Line: **Regency, Uniden,** Electrohome, Houston Tracker, Space Vision
Contact: Greg or Dave

Microdish
225 E. Main St.
Logan, OH 43138
(614) 385-3200
(614) 385-9669
Product Line: **Drake,** Avantek, Chaparral, Houston Tracker, Orbitron, Raydx, Satellite Ground Components, Sat-Pak, Southern Spun, Uniden, U.P. Superior
Contacts: Stanley Tansky,
Cindy Ogle

Nevada Distributing
804 East 11th
Rock Falls, IL 61071
(815)626-5800
Product Line: Arcfinder, Chaparral, Gould/Dexcel, Houston Tracker, M/A-Com, Maxi-Vue, MTI, Raydx, STS, Semco, USS/Maspro, Uniden
Contact: Sales Dept.

Northstar Technology
Hwy. 71 South
P.O. Box 232
Park Rapids, MN 56470
(218) 732-9787
Product Line: Chaparral, Corona, Hastings, Locom, Uniden,
Contact: Mark Beeman

Popkey Electronics
427 N. Clay St.
Green Bay, WI 54301
(414) 437-5445
(800) 242-7348 (WI)
(800) 558-7362
Product Line: Anderson, Channel Master, Chaparral, Com-Sat, Eagle Satellite, Electrohome, Panasonic, Regency, Uniden, Winegard
Contact: Sales Department

Satco USA
834 Cookson Ave.
New Philadelphia, OH 44663
1501 Rensen Ave.
Lansing, MI 48910
(800) 362-6781 (OH)
(800) 828-4762 (MI)
(800) 362-8619
Product Line: **Automation Techniques, Boman, Chaparral, Diamond Dish, Draco, Xtra-Link, Gillaspie, Janeil, Laser, Locom, Powertrac, Prodelin, Ranger, Satco, Sat-Tec, Tweaker, Uniden, Unlimited Fiberglass**
Contacts: Larry Greer,
David Crosier

Satellite Receivers Ltd.
1740 Cofrin Dr.
Green Bay, WI 54302
(414) 432-5777
(800) 556-TVRO
Product Line: **M/A-Com, MTI,**, Comm/Scope, Drake, Gensat, Omni Spectra, Panasonic, Prodelin, Raydx, Toki, Winegard
Contact: Sales Department

Satellite Reception Systems
1360 Essex Ave.
Columbus, OH 43211
(614) 294-4747
(800) 592-1956
(800) 228-6967 (OH)
145 N. Columbus Rd.
Athens, OH 45701
(614) 594-2524
(800) 592-1956
(800) 592-1957 (OH)
12286 US Rt. #27
Lansing, MI 48820
(517) 669-2465
(800) 851-3548 (MI)
(800) 433-9485
Product Line: **Amplica, Chaparral, Cincinnati Fiberglass, Commander, Dexcel, General Instrument, Hero, Houston Tracker, Janeil, KLM, MTI, Panasonic, Quik-Pro, STS, Sat-Pak, Space Vision, Winegard**
Contact: Sales Department

Satellite Sales
688D Alpha Park
Cleveland, OH 44143
(216) 461-0000
(800) 321-1188
(800) 321-1245
6955 Worthinton-Galena Rd.
Columbus, OH 43085
(614) 431-1517
405 N. Willowbrook Rd.
Coldwater, MI 49036
(517) 278-7574
Product Line: **California Amplifier, Chaparral, Drake, Luxor, M/A-Com, Prodelin** Astro, Birdfinder, Hero, Houston Tracker, KLM, NEC, Newton, SGC, Weatherwall
Contact: Debbie Black

The Satellite Store
P.O. Box 118
Ottertail, MN 56571
(218)367-2303
Product Line: Cosima, Norsat, Regency, STS, TDF/Hytek
Contact: Jim Bucholtz

Shaka Corporation
8458 Brookville Rd.
Indianapolis, IN 46239
(317) 352-0444
(800) 228-8991
Product Line: Avantek, Chaparral, Drake, Houston Tracker, Janeil, Luxor, MTI, Paraclipse
Contact: Robin Mace

Skyvision
2066 College Way
Fergus Falls, MN 56537
(218) 739-5231
Product Line: **Arcfinder, Chaparral, Pro-Sat, STS, Sat-Pak, Shadow, Skylifter, Skyview, VAF**
Contact: Gene Field

Srepco Electronics
2290 Arbor Blvd.
Dayton, Oh 45439
(513) 293-0871
(800) 231-2255 In Ohio
(800) 433-2273 Outside Ohio
Contact: Jack Bender
2705 Fulton Dr. N.W.
Canton, OH 44718
(216) 455-0271
(216) 535-1719 Akron
Contact Ralph Fuller
1045 Ridge Street
Columbus OH 43215
(614) 486-9483
Contact: Chuck Ferrell
3847 Pearl Avenue
Lorain, OH 44055
(216) 277-1228 Loraine
(216) 322-0467 Elyria
(216) 871-0798 Cleveland
Contact: John Niskey
Product Line: **Belden, Blonder-Tongue, Channel Master, Chaparral, R.L. Drake, Pro-Sat, Uniden, Wilson**

TSS
RR #1, Box 110D
Battle Lake, MN 56515
(218) 864-5283

(800) 942-8347
Product Line: **Chaparral, Gentek, Key, Norsat, Pro-Sat, Regency, Tatung, TDF/Hytek, TSS, Viewstar**
Contact: Jim Bucholtz

Vast Satellite
6015 State Highway #7
Minneapolis, MN 55416
(612) 920-1446
(800) 328-8322 #997
Product Line: Conifer, GBS, Hawkeye, Scanner
Contact: Greg Boss

WEST NORTH CENTRAL

Disco Dist.
3937 Park Ave.
St. Louis, MO 63110
(314) 664-2000
Coantact: Jim Brubaker
1400 Guinotte
Kansas City, MO 61420
(816) 221-7888
Contact: David Armentrout
Product Line: Alcoa, Amplica, Chaparral, Drake, Houston Tracker, Mid Tec, Odom, Pentec, Raydx, Uniden

Focii Antenna Systems
2730 SW 57th St.
Topeka, KS 66609
(913) 862-2703
(800) 358-3079 #265
Product Line: **California Amplifier, Focii, Toki,** Chaparral
Contacts: Joe Togish, Kipp Noe

Halvorson Distributing
1908 Broadway
Yankton, SD 57078
(605) 665-1240
Product Line: **Anderson Scientific, Chaparral, Hastings, Quadralite,** Automation Techniques, Locom, TDK/Hytek
Contact: Helge Halvorson

Home Cable
2231-B Centennial Rd.
Salina, KS 67401
(913) 825-7939
(800) 547-TVRO (KS)
Product Line: Avantek, Chaparral, DH, Drake, FDM, HCI, MSE, Norsat, Pro-Sat, Raydx, Skytouch, Stardish, Uniden
Contact: Dick Shogrun

J.I. Co.
3400 N. Broadway
Box 699
Minot, ND 58702
(701) 852-4466
(800) 472-2145
Contact: Rick Moe
101 E. Main
Box 489
Mandan, ND 58554
(701) 663-9526
(800) 472-2140
Contact: Larry Dale
Product Line: **General Instruments, Poleset, Regency, Winegard,** Chaparral, Hitachi, Maple Island, Pioneer, Sony

Johnson Enterprises
P.O. Box 689
Highway 281 S.
Jamestown, ND 58402
(701) 252-1431
Product Line: **Chaparral, Cosmos, Fantasy, Houston Tracker, Raydx, Sigma-Vu, USS/Maspro,** California Amplifer, Gardiner Microwave Filter, Pro-Sat, Sat-Tak

Long Distributing
RR. #1 P.O. Box 152
Viborg, SD 57070
(605) 327-3503
Product Line: Wilson
Contact: Dallas Long

Matcom
420 N. Lancaster
P.O. Box 629
Hesston, KS 67062
(316) 327-4243
Product Line: **Arunta, Raydx, Winegard,** Chaparral, Houston Tracker, Panasonic, TDF/Hytek, Uniden
Contact: Bob Ulrich

Midwest Satellite
2355 South Edwards
Wichita, KS 67213
(316) 942-3131
(800) 255-1382 #58
Product Line: Astro-Pro, Chaparral, Continental, Luxor, MTI, Norsat, SGC, STS, Sigma -Vu, Wilson
Contact: Sales Department

National Compusat
P.O. Box 383
Prairie View, Kansas, 67664
(913) 973-2777
Product Line: **Automation Techniques, Kaul Tronics, Odom, Regency, Symtel** Chaparral, Dexcel, Houston Tracker, Pro-Sat, Sat-Pak
Contact: Jim Van Diest

National Satellite Communications
9220 Cody
Overland Park, Kansas 66214
(913) 888-6333
(800) 633-5027
(800) 432-0141(KS)
Product Line: **ADM, Advantek, Chaparral, DX, Danex, Drake, Earth Stations Accessories, Earth Terminals, Hero, Houston Tracker, Janeil, Laux, M/A-Com, Paraclipse, Prodelin, Ranger, Raydx, STS, Space Vision, Toki, Uniden, Winegard**Anderson Scientific, Automation Techniques, Avcom, Belden, Blonder Tongue, California Amplifier, Gould, Kaul Tronics, Kwik Trench, Luly, Merrimac, Microwave Filter, Newton, SGC, USS/Maspro
Contact: Todd Dube

Nevada Distributing
334 11th
Nevada, IA 50201
(515) 382-6516
Product Line: Arcfinder, Chaparral, Gould/Dexcel, Houston Tracker, MTI, M/A-Com, Maxi-Vue, STS, Semco, Raydx, USS/Maspro, Uniden
Contact: Sales Dept.

R.A.L. Communications
632 Walnut
Blue Springs, MO 64015
(816) 228-1818
(816) 228-1819
Product Line: **Avantek, Blonder-Tongue, Chaparral, DX, Gilbert, Hytek, Intercept, Jerrold, M/A-Com, Winegard**
Contact: Sales Department

Satellite City
15445 Metcalf
Stanley, KS 66223
(913) 681-8250
Product Line: **Hawkeye, MTI**
Contact: Jim Byrne

Satellite Communications
304 Railroad, P.O. Box 158
Silver Lake, KS 66539
(913) 582-5819
Product Line: **Boman, KLM, USS/Maspro, Norsat, Polaris, RTM, Satcom,** Automation Techniques, Chaparral
Contacts: William Berry
Larry Swanson

Sat-Scan
601 W. Jefferson
Bloomfield, IA 52537
(515) 664-1652
Product Line: Anderson, Automation Techniques, Eagle, Gardiner, Gillaspie, Houston Tracker, Panasonic, Sidekick, TDF/Hytek, Uniden
Contacts: Gary Roberts, Jerald Roberts

Satellite Engineering Group
3127 Belmont
Kansas City, MO 64129
(800)921-1555 / (816)921-1557
Product Line: **Automation Techniques, Houston Tracker, MTI, Norsat, Sat-Trol,** Blonder-Tongue, Omni Spectra, Pico, Sat-Pak
Contact: Arthur Liebenthal

Satellite Supply & Mfg.
940 Military
Baxter Springs, KS 66713
(800) 223-8532
(316) 856-2379
Product Line: **TDF/Hytek, Wilson**
Contact: Don Phelps

Satellite Video Systems
7520 Washington
Kansas City, MO 64114
(816) 333-0315
Product Line: Arunta, Automation Techniques, Avcom, Blonder--Tongue, California Amplifier, Chaparral, DH, DX, Dexcel, Drake, Houston Tracker, IMI, Luxor, MSE, NEC, Odom, PCM, Pico, Prodelin, Prosat, Scientific-Atlanta, Super Satellite Cable, Toki, Winegard
Contacts: Doug Smith
Roger Fowler

Skywalker Communications
1369 Josephville, Rd.
Wentzville, MO 63385
(314) 327-7011
(800) 351-9006
Product Line: California Amplifier, Chaparral, KLM, Skywalker, Vu Mor
Contact: Roger Criebaum

Valley Products Corporation
P.O. Box 668
Valley, NE 68064
(402) 359-5500
Product Line: Amplica, Chaparral, Clearview, Dexcel, Kaul Tronics, Poleset, Pro-Sat, SelecTrak, Selectview, Uniden, Xtra-Link
Contact: David Halperin

Warren Supply Company
P.O. Box 1128
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Sioux Falls, SD 57104-1128
(605) 336-1830
Product Line: **Luxor, M/A-Com, MTI,** Dexcel, Drake, General Instrument, Omni Spectra, Regency, STS
Contacts: Russ Cramer
Ralph Warren

Yeoman's Dist.
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Davenport, IA 52807
(319) 386-2910
Contact: Kent Anderson
616 New York Ave
Des Moines, IA 50313
(515) 280-8179
Contact: Craig Northouse
Product Line: Alcoa, Amplica, Chaparral, Drake, Houston Tracker, Mid Tec, Odom Pen Tec, Raydx, Uniden

SOUTH ATLANTIC

Andrews Electronics
439 Warwood Ave.
Wheeling, WV 26003
(304) 277-4600
Contact: David Bingman
RR 1, Box 187
Shinnston, WV 26431
(304) 592-5443
Contact: Sales Department
Product Line: Chaparral, Drake, Janeil, Laux, Starbeam, Uniden, Wilson

Avsat Distributing
500 B Southlake Blvd.
Richmond, VA 23236
(804) 794-8800
(800) 241-8718
Product Line: ADM, Automation Techniques, Avantek, Avcom, California Amplifier, Chaparral, DH, Hero, Houston Tracker, Kaul Tronics, MSE, Seavey, Stardish, Uniden, Winegard
Contact: Andy Hatfield

Continental National International
P.O. Box 621
73 S. Catoctin Circle
Catoctin Industrial Park
Leesburg, VA 22075
(703)777-6960 / (703)471-1112
Product Line: California Amplifier, Chaparral, Comm/Scope, Infratek, Intersat, KLM, M/A-Com, National Microtech, Odom, Prodelin, Sat-Tec, Scientific-Atlanta, Tru-Spec
Contact: Wayne Price

L.E.S. Distributors
27000 S. Dixie Hwy
Naranja, FL 33032
Product Line: **Regency, Uniden,** Electrohome, Houston Tracker, Space Vision
Contact: Larry or Bill

National Satellite Communications
10779 Satellite Blvd.
Orlando, FL 32821
(305) 851-4738
Product Line: **ADM, Avantek, Avcom, Chaparral, Cosima, DX, Drake, Earth Terminals, Houston Tracker, Janeil, Odom, Paraclipse, STS,** Automation Techniques, Belden, California Amplifier, Gillaspie, Kaul Tronics, Lowrance, Microwave Filter, Vector
Contact: Vernon Hunter

Precision Satellite Systems
715 Grove St.
Clearwater, FL 35515
(813)441-9438 / (800)HOT-DISH
Product Line: **M/A-Com, MSL, MTI, Merrimac, Wilson,** Chaparral, Coax-Seal, Focal Finder, Hero, Houston Tracker, One Run, Paladin, Precision, Ranger, Satellite Ground Components, Search Free, Space Vision, Uniden
Contact: John Peters

Quarles Satellite Systems
1616 Calhoun Rd.
Greenwood, SC 29646
(800) 845-6952
(800) 922-9704
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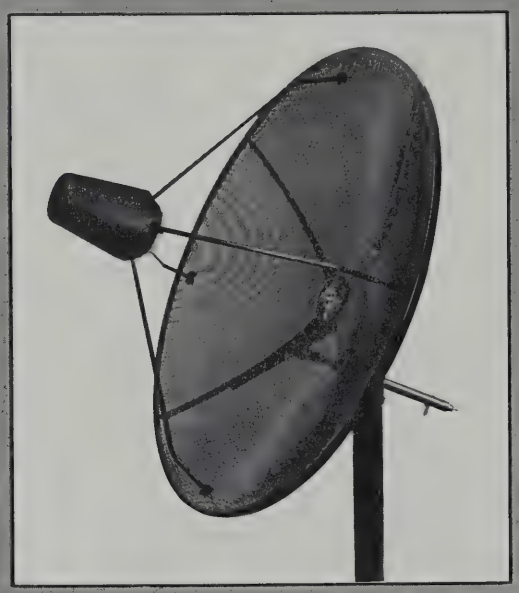

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Bill Quarles

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Contact: Leonard Carr
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Sandy Springs, SC 29677
(803) 261-8209
Contacts: Bob Hamburg
Bruce Rollin
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(800) 432-1137
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Contacts: John Sablio
Charles Gerbing

Skyhigh Satellite Distributors
1492 Hwy. 17 North
Mt. Pleasant, SC 29464
(803) 884-8673
Product Line: Amplica, Arunta, Paraclipse
Contacts: Marilyn or Sam Gasque
John Thomas

Southeast Satellite
U.S. 1 North, Tall Pines Industrial Park
St. Augustine, FL 32084
(800) 824-DISH
(800) 824-3300
Product Line: **KLM, Luxor,** Avcom, Avantek, Channel Master, Chaparral, Comm/Scope, Dexcel, Drake, Gould, Houston Tracker, M/A-Com, MTI, Prodelin, Scientific-Atlanta
Contact: Robert K. Davis Jr.

Star-Com South
3402 Apalachee Parkway
Tallahassee, FL 32301
(904) 878-0816
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Contact: Cyndee Harding

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(800) 221-4656
1403 Mechanical Blvd.
Garner, NC 27529
(919) 779-0273
(800) 362-6154
(800) 722-0647 (NC)
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Contact: Richard Goodwin (VA)
Contact: Don Vicini (NC)

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1515 Shenandoah Ave.
Front Royal, VA 22630
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Contact: Peyton Johnson

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Miami, FL 33126-2929
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(305) 662-2020
(800) 327-7272
(800) 562-3474 (FL)
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Contacts: Mohammed Usman,
Richard Mixson,
R. David Butler

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Bowling Green, KY 42101
(800) 452-3058
(800) 554-3464
(502) 782-7518
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Contacts: Pat Casdorph
Mike Casdorph

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Savannah, TN 38372
(901) 925-3000
Product Line: Automation Techniques, Avcom, California Amplifier, Drake, Gentek, Houston Tracker, Janeil, MSE, Pro-Sat, Sat-Tec, Skywalker, Southern Spun, Stardish, Uniden, Universal, Winegard
Contacts: Johnny Bellis
Gene Wood

Best Reception Systems
Route 4, Box 265
Rockwood, TN 37854
(615) 354-2999
Product Line: **Continental, Draco, USS/Maspro,** Chaparral, Gillaspie, Houston Tracker, M/A-Com, Mitsubishi, Seavey, Space Vision, TDF/Hytek, Vista, Wilson
Contact: Jeff Crabtree

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Fulton, MS 38843
(601) 862-2132
(800) 892-4916
Product Line: Anderson Scientific, Cayson, Chaparral, Drake, Gillaspie, Hammerblow, Luxor, Maxum, Norsat, Pro-Sat, STS, Space Vision, Spectrum, Uniden
Contact: Royce Cayson

Columbia Communications Consultants
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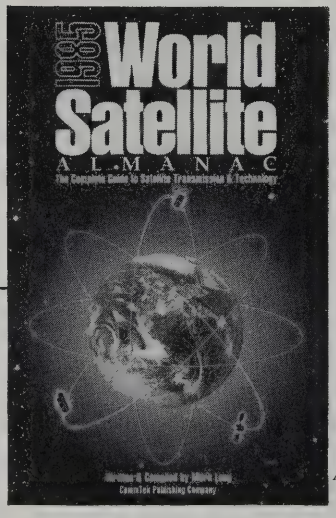

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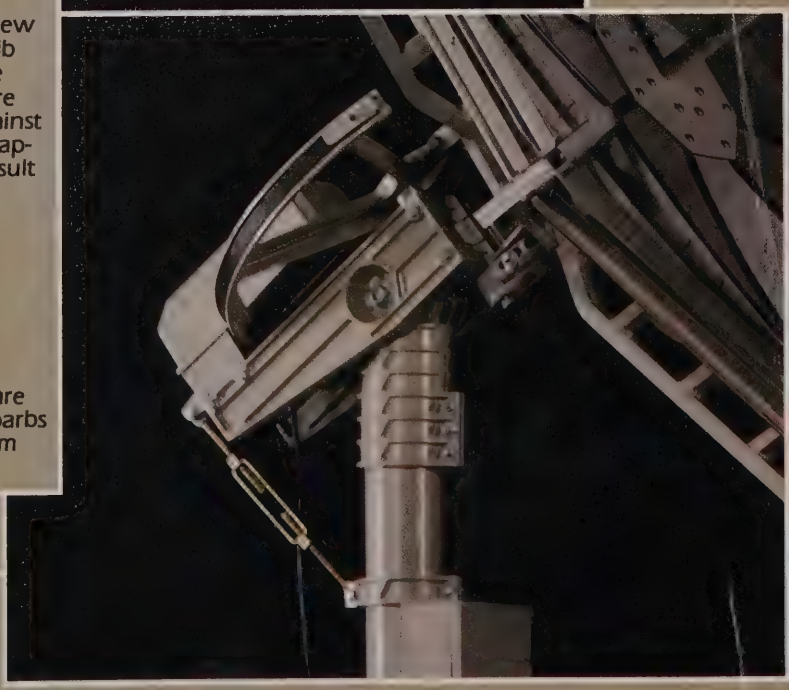

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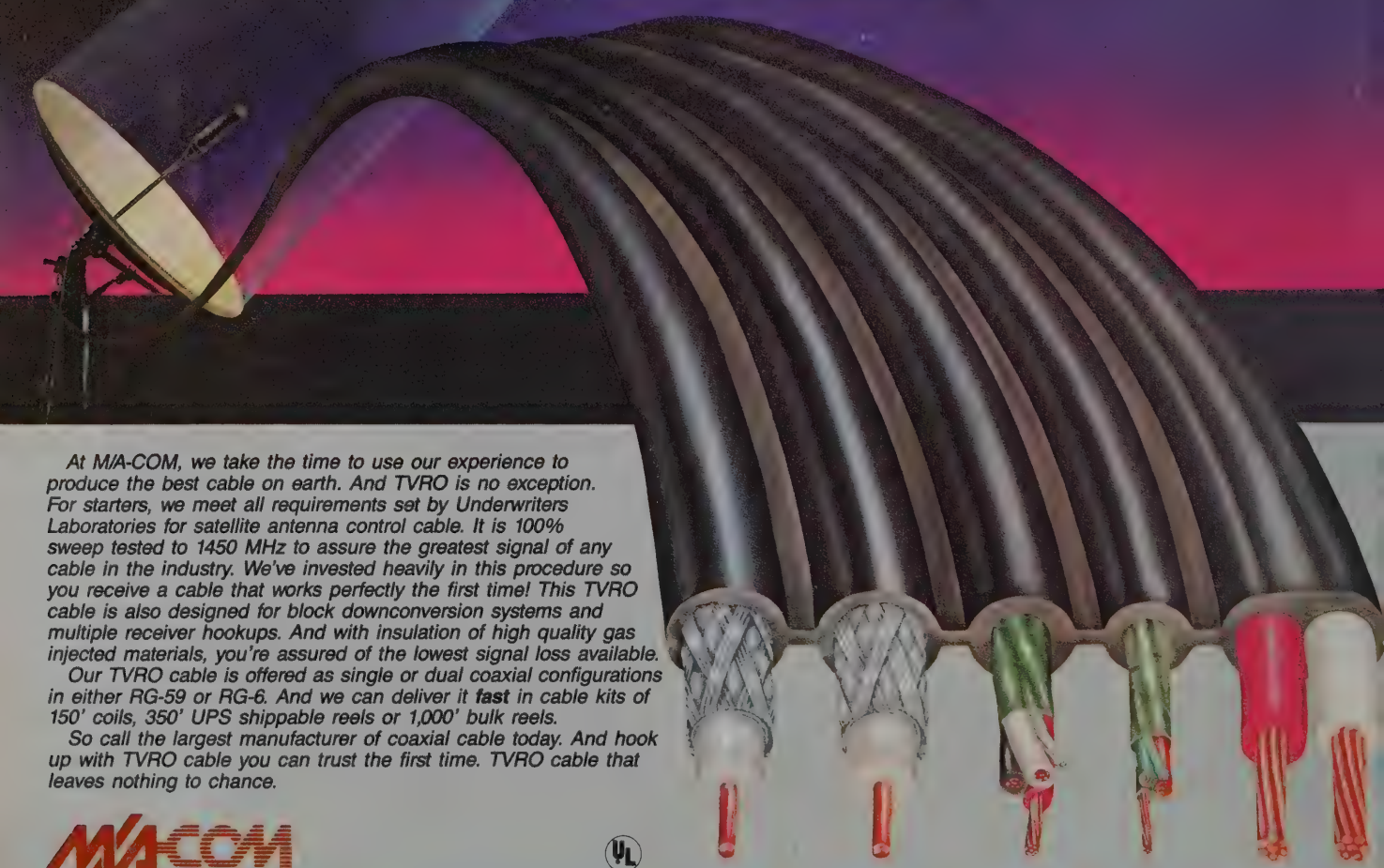

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Contact: Eric Weiss

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Lexington, KY 40509
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(800) 624-2942
Contact: Wayne Dotson
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Omni

Cox Enterprises
RR 4, Box 280
Rockwood, TN 37854
(615) 354-3471
Product Line: California Amplifier,
Draco, Seavey, Wilson
Contact: Tom Cox

Echosphere East
10536 Lexington Dr.
Knoxville, TN 37922
(615)966-4114 / (800)223-1507
Product Line: **ADM, Anderson Scientific, Arunta, Automation Techniques, Avantek, Avcom, Blonder-Tongue, California Amplifier, Chaparral, DH, DX, Danex, Dexcel, Drake, Echo Cable, Houston Tracker, Hydroform, Janeil, KLM, M/A-Com, MTI, Newton, Nexus, Odom, Paraclipse, Pico, Prodelin, Ranger, Raydx, Regency, STS, Satellite Ground Components, Sat-tec, Stardish, Toki, USS/Maspro, Wilson,** Amphenol, Boman, Davis, Dish Set, Marshall, Microwave Filter, Newark, Omni Spectra, PCM, Precision, Satalarm, Times Fiber, UHF Associates, VideoTech, Weather Wall, Xtra-Link
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Contacts: Danny DeMaeyer
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Humboldt, TN 38343
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Contact: Sharon Williams

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Contacts: Mike Maples
Rick Kozen

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Contact: Alan Beauchamp

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(800) 322-2950 (TN)
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Contact: Jerry Miller

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Contact: Bill Spark

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Franklin, TN 37064
(800)238-3232 / (615)791-1241
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Contact: Tommy Cozart

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Nashville, TN 37210
(615) 889-3345
(800) 621-TVRO (TN)
(800) 522-TVRO
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Contacts: Bob Newcomer
Miriam Trahan
Ben Bowden

Wright Technology Mktg.
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Hattiesburg, MS 39401
(601) 545-2545
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Contacts: Orby Wright
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Contacts: Lance Billman
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Digital Satellite Corporation
7123 Interstate 30, Suite 14
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Contacts: Bill Simonite
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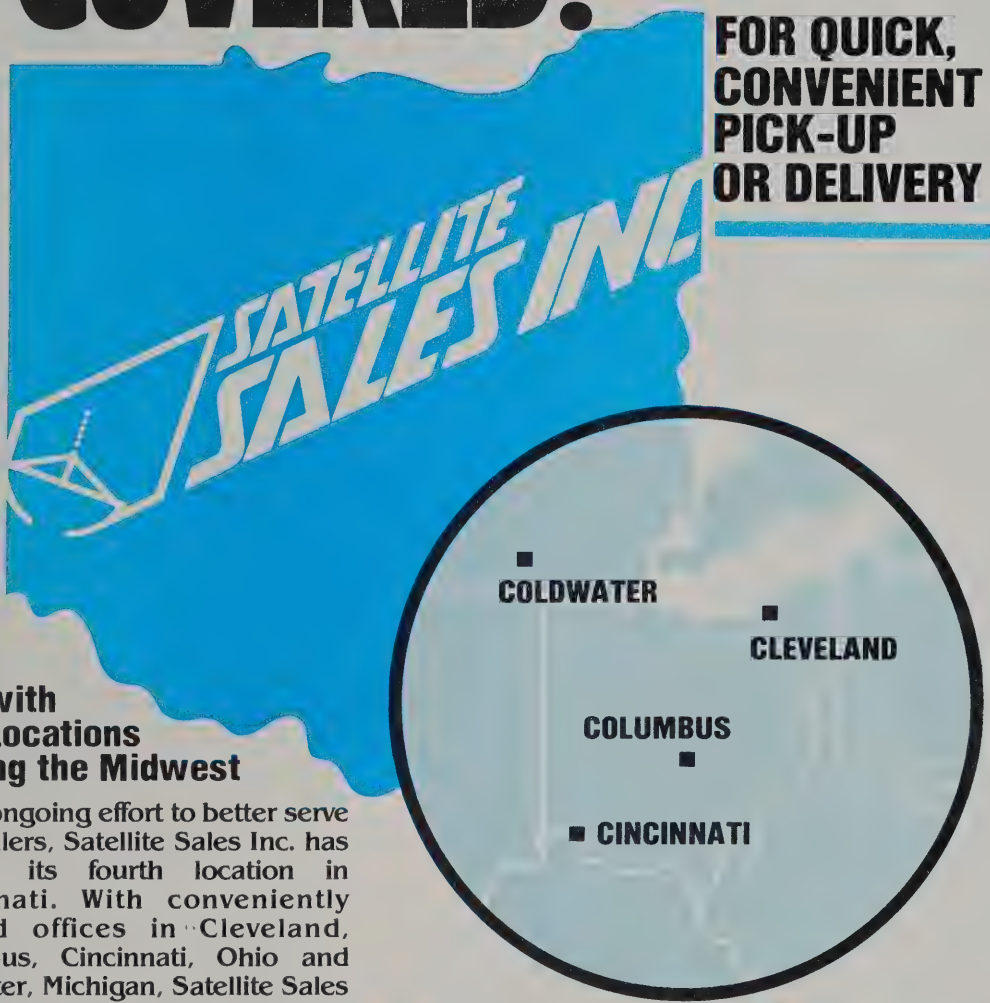

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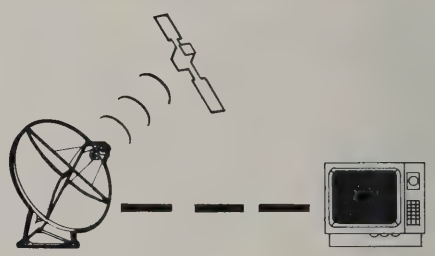

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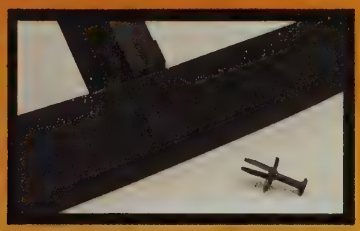

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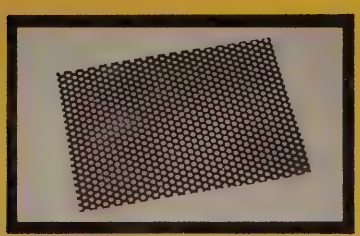

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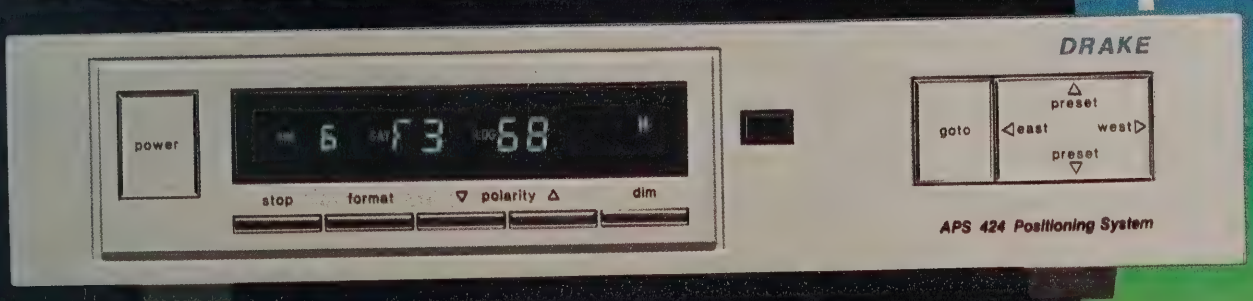

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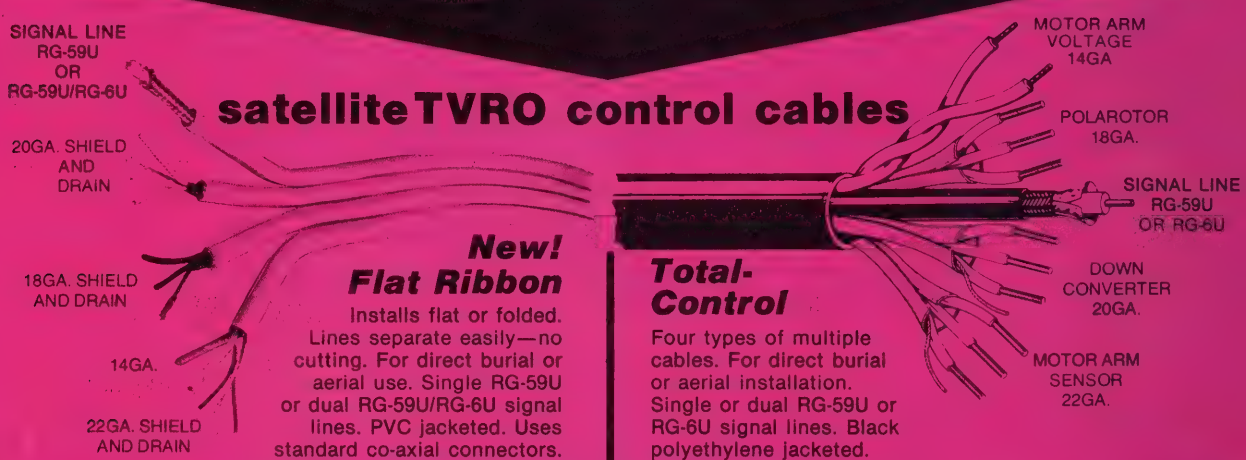

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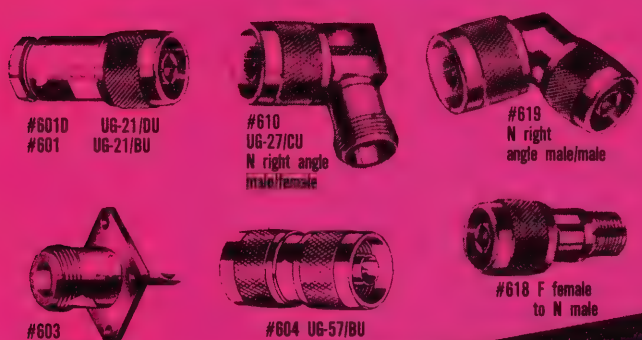
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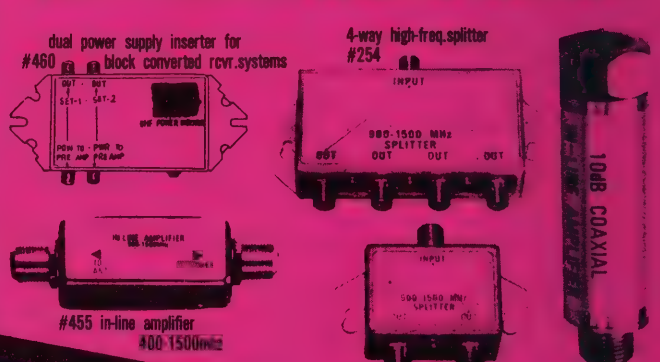

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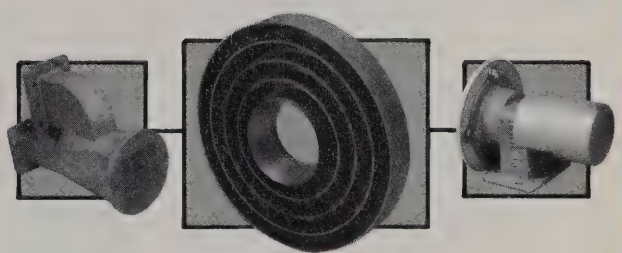

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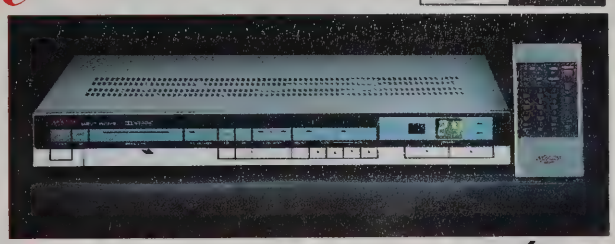

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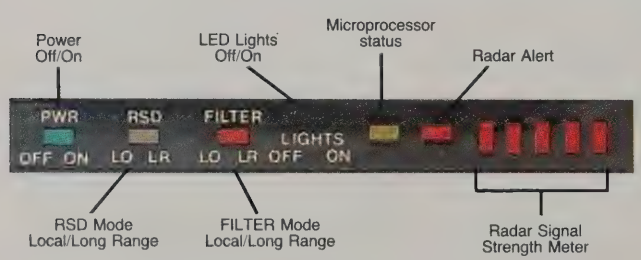

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For manufacturer to dealer direct prices, contact Star Tracker Satellite Systems at (208) 322-3522 or write P.O. Box 7922, Boise, Idaho 83707.

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CALENDAR

NOVEMBER

1 – 2 Installation School and Dealer Seminar, Sacramento, California. Contact Willie Seirer, Home Satellite, 1351 Vine St., Sacramento, CA 95814, (916) 441-6036.
2 – 3 Echosphere Dealer Training Seminar, Denver, Colorado. **23 – 24** Phoenix, Arizona. Contact Echosphere, (800) 521-9282.
6 Advanced Technical Installation, Catskill and Hornell, New York. **13** SVS Production Introduction. **16** Basic Installation Training. **20** Block Conversion, SMATV. **27** Sales and Marketing. One-month advance registration required. Contact Donna McCann, Satellite Video Services, RR #1, Box 85-S, Catskill, NY 12414, (518) 678-9581.
6 – 8 Satellite Electronics International School, Reno, Nevada; Portland, Oregon; and New Orleans, Louisiana. **13 – 15** Seattle, Washington, and Orlando, Florida. **20 – 22** Reno, Nevada, and Atlanta, Georgia. Contact Dale Hodes, SEI, 960 Matley Lane #1, Reno, NV 89502 (702) 329-6611.
12 – 13 Blonder-Tongue SMATV/MATV/CATV/TVRO technical seminar, Doubletree Inn, Intercontinental Airport, Houston, Texas. Contact Tom Spivey, (713) 649-1221 or Ralph LeBoeuf, (214) 231-3190.
13 – 14 Satellite Technology for the Non-Technical Manager, New York, New York. **18 – 19** Washington, D.C. Contact Phillips Publishing, Suite 1200N, 7315 Wisconsin Ave., Bethesda, MD 20814, (301) 986-0666.
21 – 23 TVRO Technician Antenna School, North Meridian Inn, 1530 N. Meridian St., Indianapolis, Indiana. Contact Electronics Technicians Association, 825 E. Franklin St., Greencastle, IN 46135, (317) 653-5541 or (317) 653-3849.

DECEMBER

4 Advanced Technical Installation, Catskill and Hornell, New York. **11** SVS Product Introduction. **18** Block Conversion, SMATV. **21** Basic Installation Training. Contact Donna McCann, Satellite Video Services, RR #1, Box 85-S, Catskill, NY 12414, (518) 678-9581.
4 – 6 Western Cable Show, Anaheim Convention Center, Anaheim, California. Contact California Cable TV Association, (415) 428-2225.
4 – 6 Satellite Electronics International School, Phoenix, Arizona, and Shreveport, Louisiana. **11 – 13** Reno, Nevada, and Macon, Georgia. **18 – 20** Honolulu, Hawaii. Contact Dale Hodes, SEI, 960 Matley Lane, #1, Reno, NV 89502, (702) 329-6611.
6 – 7 Installation School and Dealer Seminar, Sacramento, California. Contact Willie Seirer, Home Satellite, 1351 Vine St., Sacramento, CA 95814, (916) 441-6036.
7 – 8 Echosphere Dealer Training Seminar, Dallas, Texas. Contact Echosphere, (800) 521-9282.

JANUARY

9 – 12 The 1986 International Winter Consumer Electronics Show, Las Vegas, Nevada, Convention Center and Hilton and Sahara hotels. Contact CES, 2001 Eye St., N.W., Washington, D.C. 20006, (202) 457-8700.
24 – 26 SPACE Dealer Certification Classes. Contact SPACE, (703) 549-6990.

FEBRUARY

19 – 21 SPACE/STTI Las Vegas Trade Show '86, Las Vegas, Nevada, Convention Center. For show information contact STTI, P.O. Box G, Arcadia, OK 73007, (800) 654-9276. For information regarding SPACE dealer certification classes, contact SPACE, 300 N. Washington St., Suite 310, Alexandria, VA 22314, (703) 549-6990.

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THIS IS THE FIRST TIME HE'S BEEN OUTSIDE SINCE WE INSTALLED THAT THING!
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Tina Gerson

Out of Season: ***Since most of us are preparing for frigid weather, we thought one final look at a sunny scene would help bring back summer memories. Sybil Feingold catches a few rays in a dish outside Walt's TV in Tempe, Arizona.***

If you've got a good photo portraying any aspect of satellite TV, we'd like to see it. We'll pay $50 for each color shot we choose to publish, $25 for each black-and-white. Send entries to Prime Focus, *Satellite DEALER* Magazine, P.O. Box 29, Boise, ID 83707. Enclose a self-addressed, self-stamped envelope to assure return of your submissions. We assume no liability for lost or damaged materials.

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June '85, Satellite Dealer

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August '85, Satellite Orbit

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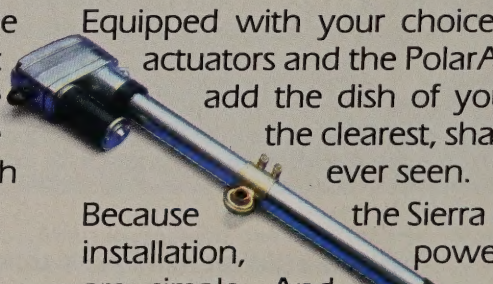

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DAVID OWEN-THE ATLANTIC (MONTHLY) JUNE 1985.

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■ 1	Electronic Polarizer
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